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ENGINEERING A VICTORY FOR OUR ENVIRONMENT: A CITIZEN'S GUIDE TO THE U.S. ARMY CORPS OF ENGINEERS

Thomas M. Clement, Jr., et al

Institute for the Study of Health and Society
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ENGINEERING A VICTORY FOR OUR ENVIRONMENT:

A CITIZENS' GUIDE

TO

THE U. S. ARMY CORPS OF ENGINEERS

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INTRODUCTION

Our nation's rivers, streams, and lakes have long been a source of inspiration and pleasure to our people. Thoreau's vivid descriptions of his life on Walden Pond and his canoe trips down the Merrimack River; Twain's tales of life on the Mississippi; Hemingway's short story about a fishing and camping trip on "The Big Two-Hearted River" - each of these pays homage to the waters.

Millions of Americans have made our waterways the center of their recreation, whether it be fishing for trout in a bubbling stream, clinging to a rope swinging high over the "swimming hole," or paddling precariously down the white-watered rivers of the West. Generations of Americans have sung about "Ol Man River...he just keeps rollin' along..." But does he?

At the same time, Americans have used the waterways as their lifelines. Our rivers have served as the source of drinking water, electric power, crop irrigation, industrial processes, transportation and waste disposal. They have been dammed, dredged, diverted, paved, piped, heated, and treated. The much-heralded taming of the American wilderness begun by the pioneers and continued by present-day developers has had a profound impact upon our water resources.

The American people, as users of the waterways for both recreational and developmental purposes, have the privilege--nay, the responsibility--to involve themselves in planning how and where the nation's rivers are to be used. In many cases, at this late hour in our national development, the question is whether a stretch of water should be altered at all, or whether it should be left in a natural state. The purpose of this book is to guide citizens toward effective participation in water resource planning, with particular regard for the water resource projects of the Army Corps of Engineers.

The Corps of Engineers is the branch of the Federal government with primary responsibility for the planning, construction, and operation of major projects on our waterways. Its dams, levees, canals, bridges, and reservoirs have been built to further the causes of flood control, navigation, water supply, electric power, and recreation. The Corps has responded to the demands of a nation undergoing rapid economic and industrial development, with its growing work force and spreading urban areas. Until quite recently, the Corps of Engineers was regarded almost universally as an heroic body.

Recent comments about the Corps, however, have not always been so enthusiastic. Justice William O. Douglas, for one, has gone so far as to call the Corps "public enemy number one," and there are others who share his view. Less extreme and more widespread is the belief that the Corps is the agent of industry and Congress, and the enemy of conservationists.

Why the change in public attitude toward the Corps? There are several factors involved. First, and most important, has been the recent increase in public awareness of environmental considerations. This has been accompanied by the growing sophistication and organization of conservation groups. Previously, such groups were centered mainly around a common love for woodlands, hiking, fishing, and the like. Now they are adding a penchant for political action to their appreciation of nature and outdoor recreation.

The mass media have also contributed to the Corps' public relations problems. There have been numerous exposes of "pork barrel" projects, and while these pieces have been critical primarily of Congress, they have also hurt the Corps' "image." They have often had the effect of arousing citizens' anger and then leaving them with a feeling of helplessness in the face of a giant conspiracy of back-scratching bureaucrats.

The Corps has been slow to comprehend the reasons behind the growing criticisms of its work. Recently, however, it has shown an encouraging capacity to understand the environmental movement. It is talking more and more with private citizens and inviting their participation. Many Corps publications intended for public distribution begin with a message from the Chief of Engineers, Lieutenant General F.J. Clarke, expressing the Corps' concern about environmental matters and public participation:

> Many responsible citizens are concerned today about the conservation and enhancement of our environment. We in the Army Corps of Engineers are concerned also. For almost two centuries the Corps, as the principal planner and developer of America's water resources, has responded to the changing needs of the Nation for the various benefits of water resources development. In this tradition, we are determined to remain sensitive to the American people's growing awareness of the importance of environmental quality. We are scrutinizing and revising our planning techniques to insure that they accurately reflect our concern for environmental values. The problems, while complex, are not insurmountable.

> The Corps will continue to seek balance in meeting the environmental and developmental needs of our Nation. Merely determining whether or not a specific engineering solution is economically justified is not enough. We shall encourage and support efforts to bring the best existing ecological knowledge and insights to bear on planning, developing, and managing the Nation's water and related land resources. Environmental values will receive full consideration along with economic, social, and technical factors.
>
> To realize the goals of environmental conservation, we must have active public participation in the planning process. We shall provide governmental and nongovernmental agencies and the public with timely information opportunities, consequences, benefits and costs - financial and environmental. Before making recommendations, we shall actively solicit the views of those affected by our proposals.

But if the Corps of Engineers is to be more receptive to responsible public opinion, then the citizens must speak to the Corps in a stronger and clearer voice about environmental factors, and must also be willing to listen to the Corps' own views. We hope the information and suggestions found in the following pages will aid citizens' groups to do just that. We hope, too, that our suggestions for improvements within the Corps will be received in a spirit of constructive criticism, since that is our intent.

Before seeking to influence project planning in the Army Corps of Engineers, citizens should find answers to a few basic questions about the Corps:

1) What factors are considered in the planning of water resource projects?

2) How are environmental and economic factors incorporated in project planning?

3) What is the exact procedure followed by the Corps in taking a project from its earliest planning stages to completion of construction?

4) What are the appropriate channels for citizen involvement in each step of the process?

The Corps of Engineers plans and supervises construction of both military and civil works projects. Military construction is outside the scope of this book. The civil works projects of the Corps will be our main focus, but we will also include a discussion of the regulatory powers which the Corps of Engineers holds on our national waterways. Both aspects of the Corps' civil works program have excellent opportunities for citizen action. In fact, the Refuse Act of 1899, which gives the Corps power to regulate dumping of wastes into the waterways by private parties, has been gaining prominence of late and has aroused special interest among action-oriented groups seeking to abate particular nuisances.

FUNCTIONS OF THE CORPS OF ENGINEERS

Civil Works Projects

The Army Corps began to oversee military construction during the American Revolution. In 1824 it added civil projects to its defense-related activities, when Congress asked it to clear obstructions for some navigable waterways. Since 1936, when the Flood Control Act was passed, the Corps has flourished; by 1970 the Corps had 3,950 civil projects completed or in progress, representing an investment of some 33.2 billion dollars. The civil works division currently employs about 200 military officers and 32,000 civilians spread across the country in 11 division and 37 district offices. Within the continental United States, the number, area, and location of divisions are based primarily upon civil works considerations. Each division is charged with responsibilities encompassing a major watershed or a group of contiguous lesser watersheds. The district offices perform virtually all survey, planning, construction, operation and maintenance work of the Corps of Engineers. Districts are commanded by engineer colonels or senior lieutenant colonels and they may have from zero to six additional officers. The remainder of the staff is all civilian. All work done by the districts is supervised by the divisions.

While the Corps reports to the Department of Defense in matters relating to the national defense, it is responsible directly to the Secretary of the Army and the Congress in its civil functions. All Corps of Engineers projects must be authorized and funded by Congress. The Corps' share of the Public Works appropriation for fiscal year 1970 was $1.1 billion, or about 70% of all money allocated to natural resource concerns in the Federal budget. At that time, there were 275 projects under construction and 452 more which had been authorized by Congress but not yet begun.

Civil works projects developed by the Corps of Engineers are generally multi-purpose in nature, and according to the Corps, may encompass any combination of the following goals:

- flood control
- navigation improvement
- hydroelectric power production
- water supply for industry, agriculture, and municipalities
- water quality control
- recreation
- conservation of fish and wildlife

The Corps provides guidance to local communities in the management of flood plains, since zoning and land development have a potentially great impact upon flood damages. Additionally, the Engineers participate in comprehensive study and planning for development of the country's major river basins. Special attention is currently being given to the Appalachia region.

Pamphlets published by the Corps each year surveying projects and studies in each state describe some of the factors considered by the Corps in its planning process:

> Considerations which enter into recommendations for project authorization to Congress generally include determination that benefits will exceed costs, that the project is engineeringly sound and will meet the needs of the people concerned, and that it makes the fullest use possible of the natural resources involved.
>
> ("Water Resources Development by the United States Army Corps of Engineers in New York State", January, 1971,p. iv.)

Environmental groups must encourage the Corps of Engineers to place a strict interpretation on phrases such as "benefits will exceed cost", "engineeringly sound", and "meet the needs of the people concerned". Costs and benefits must be viewed in more than a strictly economic sense; environmental costs must be added to dollar costs with care. A project must have more than structural integrity to be considered "engineeringly sound"; indeed, it must be determined whether the application of any engineering at all outweighs the value of nature's own engineering in determining the course and flow of a river. Finally, "the people concerned" are not only those who will actually use the new facility, but also those who live in the project area and those who must pay for the construction with their tax dollars. Citizen groups seeking a voice in project planning must find ways to plug themselves into the political process, since the use of Federal funds for water resource development is, first and foremost, a political matter. Political action should, whenever possible, be bolstered by economic, scientific, legal, and engineering expertise. The task is sophisticated and complex, but certainly not beyond the grasp of a dedicated citizenry.

Regulatory Powers

The Corps describes its regulatory powers as follows:

> . . .the Corps of Engineers has the responsibility for administering the Federal laws for the protection and preservation of the navigable waters of the United States, embracing: granting permits for structures in, over, and under such navigable water; establishing regulations for use of navigable waters from oil or refuse.
>
> ("Water Resources Development by the United States Army Corps of Engineers in New York State", p. v.)

It is in the courts that citizens have helped enforce the Corps' regulatory powers. A fuller discussion of this area of Corps activity will be found in Chapter Four.

There is no set prescription for effective citizen action in relation to the Army Corps of Engineers. As in pharmaceutical matters, every remedy has potential side-effects and must be prescribed carefully with regard to the specific problem and setting. If we were to put citizen action on some sort of spectrum, we would have to cover the entire range from close cooperation to sharp confrontation. In some instances, citizens have been successful in cooperating with the Corps and helping to produce water resource projects which were satisfactory to both the Corps and environmentalists. In other cases, citizens have not found the Corps officials in their District to be cooperative at all, and have had to resort to confrontation on several fronts, including the press and the courts. Corps officials assert that there have been occasions, on the other hand, when the public has not been cooperative. We hope that our suggestions will help to foster more cooperation between citizens and the Army Engineers; in all cases, we advocate the use of cooperative techniques until and unless they are proven fruitless. It is far better to start on the "conservative" end of the spectrum and take a left turn later if necessary than it is to start out with a spirit of antagonism which has the potential of precluding all cooperation from the Corps.

A THEORY OF SUCCESS FOR ENVIRONMENTALISTS:

PRESTIGE vs PROGRESS

Why are some groups very successful in the environmental movement, while others only succeed in compromising crucial issues or experience no success whatever? This is a most interesting question and involves dabbling in some basic ecological theory (for those theoretically inclined), much of which has been developed and explained by Steve Fretwell of the Kansas State University Division of Biology. Fretwell has attempted to explain mathematically why ecologists should become competent in both the theoretical and descriptive aspects of ecology (mixed training) as opposed to specializing in either theory or data collection (specialized training). His argument is that ecologists (environmental groups in our case) with mixed training will make more scientific progress than ecologists (groups) with specialized training. Fretwell's idea is developed as follows:

"What do we use for a measure of success in developing the strategy (mixed vs specialized) of being an ecologist (environmentalist)? There are two alternatives: we can measure success in terms of prestige, or in terms of progress. Prestige comes from the judgments of our peers and superiors. The average ecologist (environmentalist) receives such judgments in encounters at meetings, in reactions to publications, and through other social or professional media.(Emphasis added)

"Scientific progress is measured in terms which depend on scientific methodology." Environmental groups can measure this progress by how effectively they reach their goals. The hypothetico-deductive (H-D) scientific method is generally accepted as the best methodology for making scientific progress. The steps in the H-D method are:

1) Speculation (possibility of a dam, channel, etc.)
2) Hypothesis formation or model building (possible social, economic, and ecological impact of the project)
3) Deduction-prediction (make a prediction based on the possible impact)
4) Data gathering (collecting all the facts about a project)
5) Data-hypothesis evaluation [do the facts about the project verify or refute the prediction in (3)]
6) Explanation
    a. If data refute prediction, go back to (1)
    b. If data verify prediction, go back to (3), new prediction

"Steps (2) and (3) require theoretical competence, steps (4) and (5) data collection. Each step depends on the ones previous to it, and following it. The theory is usually dependent on the data that is being explained and predicted, and the data always depends on the theory that predicted, or will explain it.

"In describing the success for this case, we can surmise that an individual who is weak in theory but strong in data collection will do a brilliant job collecting data that neither test a theory nor can be very elegantly explained. He will make some, but very little, "H-D" progress. Similarly, the person weak in laboratory or field work, but firmly grounded in theory will offer beautiful theories that can explain only a very small part of the available data, and which are almost impossible to test. He will achieve no more progress than the data man above. The same level of progress achieved by the two specialists could be achieved by a person moderately competent in both theory and data collection work. Such a researcher would be able to explain much of the data he collected, and would be able to test most aspects of whatever theory he could develop. Since the field man has data he cannot use, and the theory man models that he cannot apply or test, their extra competence in these areas is not efficiently used."

Very simply, what has been said is that if environmentalists want to make progress, they will diversify their approach to ecological problems - multidisciplinary is the word. If prestige is the desired goal, specialize, don't diversify. As Fretwell states it:

"So, there are two strategies available: specialized training and mixed training. The first optimizes prestige, the second progress. One can satisfy his ego, (rather, his super-ego) or his curiosity, but not both. The mixed strategy scientist should tend to be criticized for incompetence by both pure theorists and pure data biologists, as he proceeds to make satisfying advances in the science. The specialis will be frustrated by drawers full of unpublished data, or untested theories." (Emphasis added)

This book is for citizens wishing to measure their success by the progress they make in solving our many environmental problems (by way of a multidisciplinary approach). For those that can measure their success only by prestige, this book ends with this sentence.

The first step toward effective citizen action lies in the organization of citizens' groups. Perhaps our first chapter will provide some helpful ideas about how to get started.

Suggested Reading

Introduction

Water Resources Development, U. S. Army, Office of the Chief of Engineers, Technical Liaison Office, Washington, D. C. (Free)

CHAPTER I

HOW TO ORGANIZE A CITIZEN'S GROUP

In this book, we hope to tell citizens how to communicate *effectively* with the U.S. Army Corps of Engineers. The Corps has a considerable impact upon our environment; not only does it alter our waterways through its water resource projects, but it also has an influence, sometimes unintentional, upon the use and development of land areas near the sites of its water projects.

Because zoning and land development are the responsibility of local government and cannot be directly controlled by the Corps, we cannot expect planning engineers to guarantee an absence of objectionable development in a project area. It can be seen, however, that a water resource project often creates the conditions which are likely to foster rapid development; therefore, the Corps has an indirect control over this development. The desirability of such development should be among the factors to be considered carefully by Corps planners and local citizens alike. The Corps with all its political know how could do much to insure ecologically-acceptable flood plain zoning and development through improved design methods, real estate acquisition, and insisting on obtaining local assurances that guarantee a diverse habitat.

We are writing primarily for citizens who are concerned about the environmental impact of Army Corps projects. Concern of this sort may come from a familiarity and love for the immediate area in which a project is proposed, or it may follow a long-established pattern of awareness and activity in the conservation field. In either case, we are advocating an approach which has sometimes been referred to as "the new ecology" or "the new conservation" and which may be defined as an action-oriented, politically effective citizen's lobby in behalf of our environment. Longtime lovers of the outdoors, like newcomers to the field, can gain much from a thorough examination of the way in which Army Corps projects are planned, evaluated, authorized, and constructed. In seeking to influence project planning, citizens need two things: organization and information. This chapter will deal with the former, for the process of organizing a citizen's group for effective action must come first.

Citizens' groups which have worked successfully with (or against) the Corps of Engineers have, for the most part, been coalitions consisting of representatives from established conservation, civic, and sporting groups. Possessing names like the Committee on Allerton Park, the Florida Defenders of the Environment, the Columbia River Conservation League, and the California Committee for Green Foothills, these organizations have usually focused their efforts on specific Corps projects within their local environment. They have been formed on an ad hoc basis, but they have been careful to cooperate with existing groups and draw upon their membership lists, expertise, and contacts.

Getting Started

Mr. Angler, a local citizen and member of the Winding River Trout Fishermen, has heard from his friend Mr. Stalwart, a businessman and officer in the Chamber of Commerce, that local officials are discussing with the Corps of Engineers a possible stream channelization project on a nearby portion of the Winding River. Angler fears that a concrete pavement in the river will have an adverse impact on the local fishery, and he wants to "do something" to be sure that this is not so or, if it is, to stop the project. Stalwart, on the other hand, is very enthusiastic about the Corps' idea which is designed to control local flooding, because a local real estate developer (who is also an officer in the Chamber of Commerce) has plans for a large complex of office buildings, apartments, and shops to be built on the flood plain after flood protection is completed. The Chamber of Commerce anticipates a large increase in business and tax revenues as a result of the development. Stalwart also describes to Angler how Mr. Mildew, a shopkeeper on Front Street, had come to the Chamber of Commerce as spokesman for all the Front Street merchants who were flooded out during the preceding year. Mildew had begged the Chamber to do whatever it could to obtain flood protection for the commercial district along the riverfront part of the flood plain.

Angler realizes that the business and financial interests he will be meeting are formidable, and that he must organize conservation and sporting enthusiasts in order to inject their viewpoint into the discussions with the Corps of Engineers. He begins by contacting the other members of the Trout group, who discuss the project at their regular monthly meeting. They decide to alert the members of other groups. They look in the Conservation Directory, published annually by the National Wildlife Federation, for the names of organizations within their state. In addition to contacting the local chapters of some of the well-known national groups (such as the Sierra Club, the Izaak Walton League, and the Wilderness Society), they talk to regionally-based recreational groups of canoeists, hikers, and campers. They then plan a general meeting for all these groups to organize an umbrella organization and to discuss what they know about the proposed project.

(Later chapters in this book will describe how to find accurate information about the Corps' plans for a project; at this point we are concerned only with the organizational aspects of a citizen group.)

Out of the meeting comes a new organization--the Winding River Preservation Committee, with Angler as its chairman. Each of the groups represented at the organizational meeting agrees to take on its own studies and monitor the Corps' planning within its field of expertise to contribute to the whole effort. The canoeists, fishermen, and campers will study the recreational use and potential of the river; the Audubon Society and Sierra Club members will investigate area wildlife, and so on. The group as a whole agrees to seek professional legal, economic, and scientific help from the faculty of the nearby state university, and to seek data from the Corps itself as well. A member of the local League of Women Voters agrees to write to local, state and federal officials to learn their views on the Corps proposal. A second meeting to report on progress and plan further action is scheduled for two weeks later. At that time, representatives from each of the affiliated organizations will bring membership lists so that the Winding River group can send out an appeal for support and funds.

This hypothetical group is off to a good start. Like any volunteer organization, it will have to rely upon the dedication and hard work of its members. While a broad base of public support is being sought, the Winding River group doubtless will learn very quickly that the real workers in the organization will form only a small nucleus of the organization--perhaps no more than a dozen people.

At the outset, it is important for citizen groups to set forth a list of goals and priorities. Goals should fall into short, medium, and long-range categories. A typical short-range goal might be to collect the data obtained by members working in environmental, economic, and legal areas. A meeting with the Corps to learn more about the proposal and to present the group's own findings might be a good medium-range goal. A long-range aim would be to publish an exhaustive study of the Winding River area and the probable impact of the project.

To be truly effective, a citizen's group must operate on the principle that its existence is justified only by the tasks to which it is dedicated and the progress it makes toward achieving its purposes. Although a certain amount of time must be spent at increasing membership, raising funds, and filling offices and committee memberships, these tasks must not be permitted to overshadow the real work of the group.

The work of a citizen's group seeking to influence Corps policy is, like the 18-step authorization procedure (explained in Chapter II) mainly political. Political effectiveness is a skill, and can be learned. But it also depends upon certain characteristics which must be present in the group which seeks to be effective:

1) Members must be possessed of an insatiable desire for hard work and a perseverance against unfavorable odds. Right away this eliminates the softies.

2) Group members, and particularly leaders, must be free enough of ego problems to put personal and organizational

identity below the goals of the group. The true believer doesn't care if somebody else (usually a politician) gets the credit for stopping a dam or getting citizens appointed to a project planning committee. As Robert Theobold wrote in his book, *An Alternative Future for America II*, "you can try to get credit for social change, or you can get social change, but you cannot have both." (Chicago, Swallow Press, 1968, p. 38).

3) Citizens must have vision for the forest and the trees; that is, the group must master detailed facts while not forgetting the larger picture into which the facts must be placed.

4) Every lobbying organization, to be effective, must possess at least three senses - the sense of perspective, the sense of timing, and plain old common sense. Perspective means keeping priorities in order according to their real importance, and not getting hung up on tangential problems. Timing is important in knowing when to act and when to play a waiting game. Common sense must be applied to every phase of the struggle.

5) Citizens dealing with the Corps, as well as with government spokesmen on local, state, and national levels, must exercise an abundance of diplomacy and human understanding. A simple tactic which helps win friends and influence people is to *praise* the Corps, or a Congressman, or local authorities, when they do something right. It is important to keep those with viewpoints different from your own from feeling defensive and under attack, if you wish to gain their cooperation.

6) The virtue of patience must be present within the group. Remember, many Corps projects remain on the drawing boards for years and years before construction is begun.

7) There must also be a willingness to compromise, since almost all disputes are resolved through compromise. Don't compromise your principles, but do compromise where it will help your larger purpose. (A sense of perspective, remember?)

8) Citizens should remember that if their studies and conclusions are to be respected, they must be *objective*. While a group like Mr. Angler's may begin with a hypothesis, it must wait until all the fact are in before reaching a conclusion. The conclusion should conform with the facts, and not *vice versa*.

Gaining Public Support

How do you get people to support your cause? Public support is based on what might be described as enlightened self-interest; that is, people will support a cause if, and only if, they think it will benefit them personally. Not everyone enjoys fishing, so our hypothetical Mr. Angler will have to find ways to gain the enthusiasm of the community-at-large. To do this, he will have to develop an ability to listen to and understand many different viewpoints, and he will have to search for a common interest among them. He will have to view the Winding River issue as more than a sport fisherman's concern. He might, for example, present the following questions to his community:

1) As taxpayers, do we want our dollars to go for this project? If we do want it built, what do we want for our money? Who will receive the benefits of the project?

2) As local residents, do we want our river altered? Would the project require fencing, which would make the river a physical barrier in the midst of the community?

3) As property owners, are we satisfied with the aesthetic potential of the project?

4) As recreation seekers, would we prefer the river left in its natural state or physically altered and managed for recreational use?

5) As voters, how do we want to hold a referendum on the issue of local cooperation and shared funding of the project? Are we satisfied with the work our elected officials have done in studying the project?

And so on. There are doubtless many more questions which the citizens themselves might pose to the Corps and the Winding River

Preservation Committee as the project plans gain public awareness.

Many people are inherently reluctant to join "causes", especially controversial ones. But at the beginning, at the point at which Mr. Angler and his group have begun working, there is no real controversy. The immediate goal of the group, you will recall, is to find facts. Hence there is no stigma of a radical appearance to inhibit public enthusiasm. Controversy may come later, but if many people have already begun to identify with the Winding River group and have participated in the formulation of its goals, they will not be put off when the issues become clearly drawn.

It is important, too, to demonstrate clearly to supporters just what it is you want them to do. A good definition of frustration is to go to a meeting because you are interested in the subject matter and then to discover that nobody has a clear notion of what to do. If you want people to write letters, tell them to whom to write, furnishing title and complete address. If you want them to telephone people in the community, give them all the information they will need. If you want them to study an aspect of the problem, offer suggestions about where to find information. Be sure that everyone feels useful.

Publicity and Public Relations

Every community has people who are skilled in public relations and writing. The participation of these people on either a working or consulting basis will be most helpful. They will be able to suggest ways to gain the public's attention at many levels.

Although there is a certain negative connotation in the image of "publicity seekers", there is nothing wrong with this activity provided it does not become an end in itself. The people involved should not be seeking personal aggrandizement, but rather should be furthering the aims of the group. To this end, there are several tried-and-true methods:

1) Media coverage of special events, such as a clean-up day on the river. It is hard to argue for the preservation of a river in its "natural state" if it is, in fact, full of beer cans and automobile tires. A Saturday clean-up, perhaps involving Boy Scouts and Girl Scouts, as well as the environmentally-oriented groups, will increase the credibility of the group and be a source of newspaper stories.

2) A public statement of support from a well-known local citizen. Many communities have at least one citizen whose fame exceeds the local boundaries, and whose public statements make page one in the daily papers. Citizen groups would do well to let him or her in on their thinking and findings and urge him to make a statement of support.

3) Special "inspection tours" of the project site or the site of potential recreational facilities, preferably including some prominent invited guests such as the mayor, the local delegates to the state legislature, and a U.S. Congressman or Senator. Press releases should be distributed before the tour containing details about time, place, purpose, and people involved in the tour. After the tour, further press releases should describe what was seen and what comments were made by guests during the tour.

4) Fund-raising events, such as fairs or block parties, can serve the dual purpose of raising money and gaining publicity for the cause. Such events should always include a clear presentation of the group's views. A special booth might contain photographs, maps, brochures, and petitions to be signed by those browsing through the material.

There are, of course, many more ideas. Your group will come up with its own, tailored to fit the local community. The overall aim of the committee overseeing publicity for the organization should be to prevent a communications gap from arising between its members and other local citizens. Property owners near the site of the project should be on a special mailing list to provide them with full knowledge of all events, public meetings and statements. Nothing is more antagonizing than leaving these people out, for they will feel that it has been done deliberately, that you are trying to hide the facts from them. They will consider themselves intimately involved in the fate of their neighborhood, and they should not have to say, "But nobody ever told us about it!"

Moving in the Right Direction

Dr. Bruce Hannon, Assistant Professor of Engineering at the University of Illinois, and chairman of the Committee of Allerton Park, a citizens' group currently fighting a Corps project in Illinois, describes how his group works "within the system". He divides "the system", about which we hear so much these days, into three main areas:

1) The special interest segment, or those who derive economic or political advantage through the use and development of natural resources. This category might include barge companies, power companies, real estate developers, other business interests, and their lobbies.

2) The recourse segment, or those to whom citizens can turn for help in realizing the wise use and preservation of our natural resources. We might find recourse in all three branches of government, as well as in the communications media and among professionals with expertise in natural resources.

3) The use segment, or those who depend on natural resources in a general way. The public as a whole and the citizen lobbies are the components of this category.

The activities of an effective citizens' group should be directed at all three parts of "the system". Borrowing Hannon's outline, we can point out some of the problems and expectations of dealing with each component:

1) The special interest segment. Until fairly recently the only effective contact that elected officials have had with environmental interests has been through the special interests who stand to profit from the exploitation of natural resources. Now, however, citizens with an environmental concern are begining to be heard in opposition to these interests, because people are beginning to see the results of rapid depletion of natural resources in air and water pollution, overcrowding, loss of open space, and shortages in some resources. Although environmental groups such as the Winding River Committee often stand in opposition to vested interest groups, they should not leave the latter out of their mailing lists or public meetings. Occasionally, when environmental issues have heated up to real confrontations these vested interests have backed down. If the public makes it clear that a new plant or highway or dam will have to include environmental safeguards which will make the project far more expensive that the original estimate, the interests involved may simply decide that all the fuss has made their plan unfeasible. On the other hand, if a dam is to be built, the Corps may be encouraged by the public to build in sophisticated environmental safeguards.

2) The recourse segment. Most of the activities of citizens' environmental groups will be directed toward the recourse system. There are many ways to approach it; recourse to the communications media has already been described briefly. We have also mentioned the necessity of seeking recourse in professional expertise, particularly in legal, economic, and scientific areas.

How to approach the governmental part of the recourse system remains to be described, and even here our description will barely scratch the surface of available opportunities.

a) Administrative agencies. At the Federal level, the regulatory agencies such as the Federal Communications Commission, the Atomic Energy Commission, the multitude of bureaus and offices within the Cabinet Departments -- all of these have too often been advocates for the interests they were created to regulate. Nonetheless, citizens can do much to convince these agencies that their responsibility lies in the protection of the public, not of special interests. Other sources of recourse, such as the courts, often refuse to entertain citizens' complaints until they have "exhausted their administrative remedies." Agencies particularly concerned with the Corps of Engineers include the Environmental Protection Agency, the Council on Environmental Quality, many offices within the Department of Interior, the Water Resources Council, and the Office of Management and Budget, to name a few. Later chapters in this book will provide specific suggestions for dealing with these agencies. State governments usually have agencies which coincide roughly with the jurisdiction of Federal Agencies.

b) Legislative branch. Laws are enacted by elected officials at local, state, and Federal levels, and none of these should be neglected by environmentalists lobbying on the behalf of the people. This requires reaching enough voters to demonstrate a consensus to the elected officials. A man in legislative office is guided by his conception of what voters want, since his prospects for re-election are closely tied to his ability to deliver. An organized environmental group with a rapid system for disseminating information and marshalling signatures, letters, or telegrams will have a great impact on legislators. Here, particularly, a sense of timing is important. Public hearings provide a good opportunity for citizens to reach the legislative branch. Delivering testimony is an important skill, and we shall discuss it more fully later in this chapter.

The greatest possible impact comes of course, in an election year, when citizens can support and help fund candidates who share their view of priorities.

c) Top man--last resort. A direct appeal to the President, the Governor, or the Mayor generally comes after the administrative and legislative remedies have been tried unsuccessfully. A veto or an executive order may be forthcoming if the top man is convinced of the merits of a citizens' group's cause. It is worthwhile to include the Mayor's, Governor's, or President's office in all mailings and publications produced by the group from the beginning, since a direct appeal at the last minute will stand a better chance of success if at least a few of the chief's aides are familiar with the problem.

d) Judicial alternative. In some cases, it may be worthwhile to seek a court injunction to stop a course of action detrimental to the environment. However, this recourse has its drawbacks.

It is not applicable unless there has been a violation of law, which is not always the case. It can be expensive. Citizens have recently been successful in several suits against the Corps of Engineers, but each case must be decided not only on its merits but also on procedural matters such as standing and sovereign immunity. Good legal advice is essential for a group contemplating this course of action.

3) The Use System. We are all users of natural resources, and hence the "use system", as described by Bruce Hannon, refers to the general public. We have described several methods of involving the public through publicity and group membership. The petition method is another excellent way to involve the people, since those seeking signatures will have an opportunity to explain their cause to those they canvass, and the number of signatures may have a great impact upon elected officials. Citizens can also volunteer to lobby on behalf of a group. This kind of volunteer citizen action can be very effective in swaying political figures.

Giving Testimony

The public hearing is the formal way for citizens to present their views to public officials. Hearings are held at virtually every level of government, from the local zoning board to the standing committees of the United States Senate. The Corps of Engineers holds hearings at the District level during its consideration of water resource projects. There are a few general rules to follow in giving testimony, no matter what the level of the committee or officials who are holding hearings:

1. Write your statement. Have enough copies for each member of the committee to have one. Be sure to give a copy to each newspaper, radio, and TV man covering the hearing.

2. Make your statement BRIEF - speak no more than 4 minutes at the most.

3. Start statement with your name, address, and title or group affiliation.

4. Tell why you support (or oppose) the matter under consideration.

5. Give facts to support your position.

6. Your statement might include some of the following: (a) How does this affect the public interest? (b) Who will benefit? (c) How much will it cost? (d) What other groups favor your position?

7. Always thank the committee for the opportunity to testify.

8. If you have several speakers, have each cover a different point or present a statement from different point of view. Try to show wide-spread support in your choice of speakers. AVOID REPETITION. If you have come prepared with several speakers and are permitted only one, hand in written statements of the others. You might also plan to have written statements of community leaders who support your position but cannot come to the hearing.

9. In giving statement, speak distinctly, loudly enough to be heard, slowly enough to be understood, but not so slowly that you lose the attention of your listeners.

10. Be prepared to answer questions regarding your statement or position. If you do not know the answer to a question, don't bluff. Admit you don't know, and offer to try to get the answer if the committee wants it. Follow through. On rare occasions a committee member may be hostile and may attempt to rattle, confuse, or irritate you. Don't let yourself get confused or angry.

11. Try to have many supporters attend the hearing even though they will not testify. Some call this packing a hearing; others call it showing strength and support of your views. What you say at the hearing is important, but numbers reinforce content, and an indication of support sways legislators, as well as public opinion.

12. Listen quietly and very carefully to the statements of your opposition. If the arguments of your opponents do not hold water, don't worry. Others present will see through them too. If your opponents misstate facts and you are given an opportunity to reply, do so with dignity and in a calm manner. Do not attack your opposition, or make personal remarks in any way.

13. Respect the right of others to disagree with you. Do not applaud or show disapproval of any speaker.

Perhaps the most important thing for a citizen's group to remember is that its efforts count as much as those of any professional. A government of, by, and for the people must rely on the views of all the people. The fact that your group may consist entirely of volunteers who work only part-time on environmental concerns does not lessen the importance of the work you are doing. In fact, volunteer organizations are often far more dedicated and effective than professional ones, since volunteers work only because they are dedicated to the cause. Groups of volunteers are not locked into established methods of doing things, and often they possess a unique creativity. There is a vast difference between a dilettante and a dedicated volunteer; if you are working hard to find the facts and use them effectively within the political system, you will have an impact.

Once organized, your group will need to know how the Corps of Engineers functions. The authorization of a Corps project follows eighteen basic steps, and we need now to examine those steps.

Suggested Reading

Chapter One

League of Women Voters of the United States, Planning in the Community, No. 299, 1730 M Street N.W., Washington D.C. 20036.

League of Women Voters Education Fund publications:

The Big Water Fight, 1966.

Shaking the Money Tree, 1969.

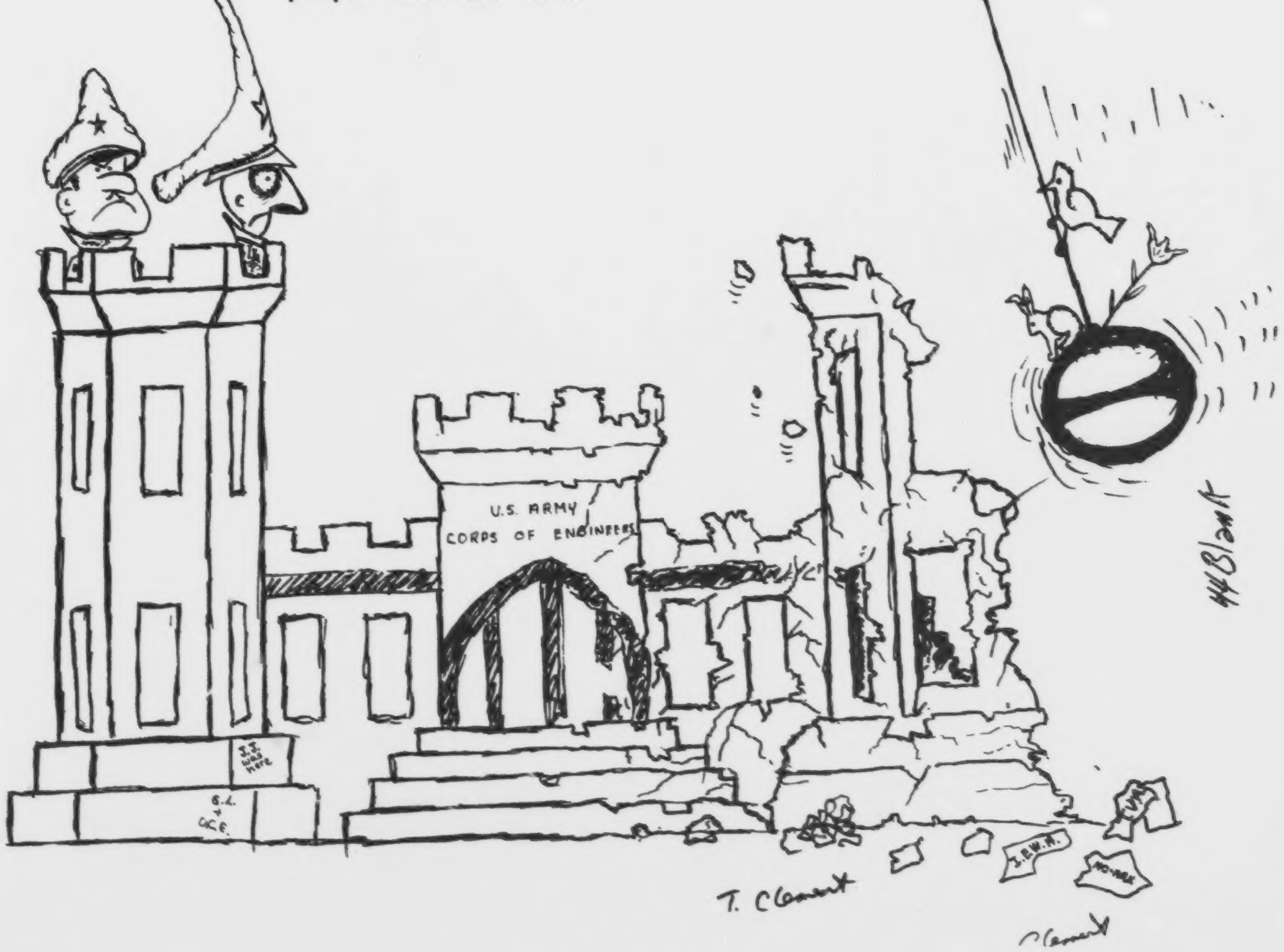
(Both available from the League of Women Voters Education Fund, 1730 M Street N.W., Washington D.C. 20036

Conservation Directory, annual publication of the National Wildlife Federation, 1412 16th St., N.W., Washington, D. C., 20036, $1.50

Reich, Charles A., The Greening of America, Bantam Books, New York, New York, 1971.

Stevens, L. Clark, e.s.t. A Steerman's Guide to the Coming Decade of Conflict. Capricorn Press, Santa Barbara, California, 1970.

"Maybe there's more to those bird and bunny people than we think."



CHAPTER II

THE "EIGHTEEN STEPS TO GLORY" AND CITIZEN PARTICIPATION

There are eighteen primary steps followed by all Corps of Engineers projects from the initial planning to completion of construction. The Corps and the Public Works Committees of Congress have often called the procedure the "eighteen steps to glory." They are set forth in Corps Pamphlet EP 1120-2-1, and if thoroughly understood by citizens' groups seeking to influence Corps projects, they can be a valuable tool for those groups. More often than not, citizens' opposition to a Corps project come to life at some point after the Corps has initiated its studies relating to the project. Citizens should thus begin their efforts by determining at which step a proposed Corps project stands, and what chance they have to stop or to change the proposal. In that way, environmentalists can have a maximum impact on the decision-making process which leads to the completion of a project--or its rejection.

"Taking on" the Corps of Engineers is a difficult job. The Corp is an extremely professional and efficient organization, and concerned citizens seeking to participate in planning should work toward equally high standards of competence and professionalism. There are a few general principles to be kept in mind by citizens' groups in following a project through its eighteen steps:

1) The group's attitude toward the Division and District Engineers of the Army Corps (who will be the main liaison between the public and the project officer and project planning chief) should be one of cooperation, not antagonism.

One can present one's case firmly without emotional attacks against the Corps; such attacks can only lessen the group's credibility and the Army Engineers' willingness to cooperate.

2) The earlier in the project a group becomes involved, the greater its chances for success in affecting the project's outcome. The greatest opportunity for citizen action is in the first phase of planning, from Step 1 through Step 6. The completion of these first six steps may take from two to five years, sometimes longer. This is ample time for groups to collect facts and present them in a concise and organized manner. It is important, too, for citizen's groups to understand all the steps well enough to know which ones afford good opportunities for action, and which ones are not conducive to anything except waiting and watching. A sense of timing is important; nothing is more counter-productive than for citizens to demand a public meeting with the Corps when the project plans are being reviewed by another agency, for example. An early entry into the planning and review process will allow citizens to use their time judiciously.

To put it another way, it is far better for citizens to be involved in initial planning than to have to resort at a late hour to such tactics as court injunctions to stop a project which has already been authorized, funded, and contracted for. Litigation can be costly and should be viewed as a last resort.

3) Early and frequent contact should be made with the local news media in order to keep the general citizenry informed on the

issues surrounding a Corps project. The daily and weekly papers, TV and radio stations--and even the "throwaway" shopping news--can use cogent summaries of the group's position. News media should be informed of all meetings and hearings with the District Engineer, and other milestones in the campaign. Working with specific reporters increases chances for maximum coverage.

4) Conservation groups can increase their effectiveness considerably by including economists, engineers, ecologists, and attorneys in their ranks. The Corps is not receptive to amateurish attacks from "bird and bunny people" who, they claim, are inevitably opposed to development anywhere, in any form. We do not imply that the preservationist philosophy is wrong; on the contrary, the need for unspoiled wilderness must be carefully considered in decisions concerning water resource projects. But nature-lovers must give themselves the benefit of expertise in scientific, economic, and legal fields. When a group's membership does not already include such expertise, it should be obtained from the community or nearby universities on either a voluntary or a paid basis. Like most bureaucracies, the Corps has an "underground" working for a total redirection of priorities and elimination of its present ecological philosophy. These people are relatively few, but are scattered from district levels up to the Chief of Engineers office. These individuals are most willing to cooperate with logical and intelligent citizen groups to show them methods of action for their particular project.

Now, a look at the "eighteen steps to glory" is in order:

STEP NUMBER ONE: INITIATION OF ACTION BY LOCAL INTERESTS, CONGRESSMEN, OR THE ARMY CORPS OF ENGINEERS

Local citizens, municipal governments, or state Governors, generally begin a water resource project by contacting their Senators of Representatives to request Federal aid in improving local water resources. They may also touch base with the District Engineer of the Corps of Engineers at the same time for advice in proposing such improvements. Local parties promoting water projects normally include in addition to citizens directly affected such interests as barge companies, industrialists, real estate developers, contractors, and the local Chamber of Commerce. All these people feel they stand to gain economically from a Corps project. Real estate developers and contractors may believe, for example, that a flood control project will enable them to develop land that was previously considered unsafe because of potential flood damage. Their interest lies in the sharp increase in land values they foresee for the area in question. Industries in the locality may look ahead to new power sources for their plants--provided by the Federal government with Federal taxes. Barge companies want an opportunity to expand their operations, competitive ability and profits by way of navigation improvements such as channel dredging. And local businessmen, united in the Chamber of Commerce, seem invariably to predict that man-made lakes will provide a wealth of recreation facilities, along with the increased commerce that campers, bathers, and boaters will bring to their town.

Sometimes the initial request for Federal assistance is made public through the press. Often, however, project proponents work quietly in the initial stage for their own benefit.

As soon as a proposal is known to an environmental group, the group should determine why the Corps has been asked to do a particular study and what group of people support the proposal. Conservationists should begin collecting data to determine what effect the proposed project might have on the ecology of the area and insisting that other local, state and Federal agencies and the Corps do the same. Emphasis should be placed on making a thorough inventory of the area under consideration, including wildlife species lists, unique geological and biological features, archeological sites and present land and water usage. The possible effect on each resource should be carefully stated with recommendations made for comprehensive studies on these possible effects. Corps policy requires that the District Engineer make an environmental assessment, actually a draft of the environment impact of the project, prior to the public hearing in Step 5. The District Engineer often begins this assessment in Step 1.

At this stage groups should not overlook the good effects of a possible project. The "project" is just an idea right now, so both potential negative and positive effects on the economic and environmental aspects should be scrutinized. The greatest value of getting involved in Step 1 is to make it publicly known that there is a concerned, organized, and eager environmental group that has expertise which should be included in all future planning of the proposal. Citizen groups should also formulate and make known their long-range goals and suggest ideas for possible alternatives to the initial proposal, including doing nothing at all.

In the past, there have been very few instances where concerned citizens have become involved this early. Hopefully this will change as the public becomes more ecologically and economically aware and as the Corps undertakes new methods of seeking public comment and knowledge and incorporating them into the initial planning. The Corps circular concerning public meetings is No. 1120-2-55, entitled, Public Meetings in Planning, which is included in the appendix.

Most states have a document called the Comprehensive State Water Plan which outlines all proposed water resource projects in the state. This report can be obtained from any River Basin Commission of State Water Resources Arency and should be one of the first items a group goes after if it wishes to become involved in water resource projects. For each state the Corps has its own annual report of the present water resources activities it is involved in. This booklet is entitled Water Resources Deveopment by the U. S. Army Corps of Engineers in ....(name of state) and is published annually by each Division of the Corps

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STEP NUMBER TWO: CONSULTATION OF SENATOR OR REPRESENTATIVE WITH PUBLIC WORKS COMMITTEE

Senators and Congressmen are usually enthusiastic about the prospect of a Corps of Engineers project in their state or district. Since the days of the founding fathers, bi-annual "Rivers and Harbors" legislation has been aptly called the Political "Pork Barrel." The prospects of obtaining Federal funds and new Federal contract jobs serve as powerful stimuli for legislators facing re-election every two years to give such projects their utmost cooperation. Most Congressmen are reluctant to question another member's pet project. Public works projects often epitomize the classic tradition of logrolling in Congress.

The first thing a Congressman or Senator does to promote a Corps of Engineers project is to request the Committee on Public Works to make a review of any existing reports on the designated project area or, where no previous report exists, to request that a study be made. Funds for such a review or study are not usually allocated when the study is authorized. The actual money is included in an appropriations bill at a future date.

Environmental groups will usually want to encourage such a study and evaluate it carefully to be sure that environmental and economic considerations are given proper weight. Occasionally, however, the most effective way to stop a project which seems blatantly uneconomic or environmentally unsound is to prevent the initial study from taking place. In such cases, existing economic and environmental information from an organized group and strong public sentiment may provide a clear picture of the basic issues involved. Whether encouraging or discouraging a study, a concerned group will want to provide Congressmen and Senators from their state with as much information as possible about the view of their constituents. To simply oppose may not be enough; a group may wish to suggest that other realistic alternatives be considered. Perhaps a study of one of the alternatives would lead to a more viable solution of the problem.

STEP NUMBER THREE: ACTION BY THE SENATE OR HOUSE PUBLIC WORKS COMMITTEE

Before the Committee on Public Works decides whether to recommend a study, concerned groups should widen their Congressional contacts to include all members of the Committee. Sending a personal spokesman to testify and talk with committee staff members is the most effective way to convince the Committee of the need for careful study of the ecological balance involved, and to insure that thorough studies are made to determine all possible project costs. If funds are not included to study every potential cost in detail, there is no assurance that these possible costs will be included in future project design.

In these early stages, ideas are considered and included in planning. In the later stages (Steps 6 through 18) only facts and figures become part of the project. The time for studying and incorporating ideas and suggestions is Steps 1 through 6. Citizens should remember that suggestions must be within reason and not brainstorms or idle dreams. Citizens should present their views to the Committees on letterhead paper in an organized and concise manner, far in advance of the action they might take on the proposed study, provided they have a fair opportunity to participate. If the proposed study borders on the absurd (such as Columbia River diversion to California or reversing the flow of Canada's rivers south to the U.S., as proposed by some water interests a few years ago), citizens should make every effort to stop any funding for a feasibility study.

STEP NUMBER FOUR: ASSIGNMENT OF INVESTIGATION BY CHIEF OF ENGINEERS

When the Congress authorizes and funds such a study, either as a review of a previously-made report or as a new endeavor, the Chief of Engineers is given primary responsibility for the study. He passes the responsibility to the Division Engineer for the project area, who usually passes it to the District Engineer. The study may take from three to five years to complete. Indeed, the entire process of building a water resource project, from initial study to completion of construction, sometimes takes more than a generation.

Funds have now been given the Corps to carry out the initial feasibility study and in most cases, it is the District office of the Corps which is primarily responsible for completing the report. The Division Engineer and the Chief of Engineers in Washington, D. C., act as advisers and reviewers of the initial plan. One the investigation has begun, citizen groups should keep in continuous and cooperative contact with the District Engineer. This initial study is the basis for all future design and planning of the proposal, and if concerned groups are to make a significant input to the proposal, it is during this study.

A citizen group should understnad fully the reasons for carrying out this initial study; for example, is there a serious flood threat, a serious water shortage or water quality problem that will be best alleviated, hopefully eliminated, by a Corps project? It is imperative to understnad all aspects of the study. Then a group can begin:

1) Gathering its own data and monitoring the Corps studies

2) Determining what it thinks is the most economically and environmentally sound solution and monitoring the Corps and other agencies involved.

3) Plugging in its ideas and expertise to the feasibility study, via the District Engineer

Citizens cannot rely on stopping or grossly changing a preliminary study of a specific problem, but they should avidly support the comprehensive study and offer various alternatives themselves. At this stage, the alternative of doing nothing must be considered as carefully as the other alternatives. Non-construction solutions and alternatives should receive very serious consideration at this stage. Such possibilities as new zoning ordinances or designation as a National Recreation Area, Scenic River or greenbelt should be thoroughly studied by citizens and various government agencies.

Sometimes the Corps is understaffed and underfunded; therefore it is unable to execute adequate studies of the viable alternatives, particularly if funds were not authorized by the Public Works Committees in Step 3. Citizens should lobby in Congress to insure adequate funding is given the Corps. A citizen group can have an invaluable impact on a project if it has the economic, engineering, legal, and ecological expertise to conduct studies which measure up to the Corps' own standards and criteria. The Corps is receptive to such inputs and openly encourages them. It is a public servant and should welcome the public's ideas.

STEP NUMBER FIVE: PUBLIC HEARINGS BY DIVISION OR DISTRICT ENGINEER

The Division or District Engineer is required by Corps policy to hold public hearings and public meetins to ascertain the views of local people regarding a proposed Corps of Engineers project. In its Pamphlet No. 1120-2-1, the Corps promises:

> Local interest will be afforded full opportunity to express their views on the character and extent of the improvement desired, on the need and advisability of its execution, and on their general willingness and ability to cooperate with the Federal Government in the costs of projects in accordance with established policies and laws. (pp. 2-3)

Organizations opposing or supporting a project idea should be prepared to give a factual and concise presentation of their views, as a group. The public meeting is one of the best opportunities for an environmental group to present its ideas and goals to both the Corps and the general public and to win converts to its viewpoint. Statements by unaffiliated individuals and emotional pleas by groups or individuals usually have only a limited effect on the Corps. Emotional statements may even have a polarizing effect, creating a situation of confrontation rather than cooperation.

Although a well-documented, factual presentation is the most important part of a conservation group's presence at a meeting, sheer numbers are also a help. By filling the hearing room with concerned people, a group can convince the Corps of Engineers that its own concerns about the possible environmental damage or economic misuse from a proposed project are widely held by enfranchised local citizens.

It goes without saying, of course, that good press coverage of the meeting is extremely important for an environmental group. The press should be provided with advance copies of the group's statement to the Division or District Engineer. Letters to editors and purchased advertisements can be used to supplement the articles, and TV coverage which should emerge from the meeting.

Corps personnel have stressed the need for small group meetings prior to the official public meeting and will welcome such informal gatherings. The idea is for both the Corps and citizen groups to present their plans and ideas so that both parties are aware of what is to be presented as testimony at the public meeting. Citizen groups, in particular, should present the essence of their testimony to the Corps before the public meeting to establish a measure of trust with the District staff and to allow it to draw up answers to the questions and to comment factually on the views of environmental groups. The element of surprise has only limited value at this early stage; avoid it if possible.

If a group has been active through Steps 1 to 5, it generally is ahead of the Corps as far as developing a tentative position on the possible environmental impact. However, the Corps hasn't begun a careful study of the problem. The Corps' planning branch has only a rough idea at this time of what the environmental impact is, and citizen groups are better advised to be tactful and patient rather than demand an environmental statement. In most cases, the District office begins seeking data in Step I, asking opinions or otherwise obtaining information of the overall habitat of the area involved. As time passes and the idea progresses to the study stage (Step 6), more concrete environmental information is collected. Hopefully, a citizen group will continuously supply the District with their evidence and ideas so that the District office has an opportunity to respond to each question raised by citizens. Groups have to get their general environmental ideas and alternative suggestions across now before the feasibility study (Step 6) has been completed and passed to the Division Engineer (Step 7) and the Board of Engineers for Rivers and Harbors (Step 8).

STEP NUMBER SIX: INVESTIGATION BY DIVISION OR DISTRICT ENGINEER

After the public hearings, the Division or District Engineer makes an analysis of engineering, economic and environmental data and develops various alternatives for solving the problem. After considering costs and benefits and public preferences among the alternatives, he decides upon the best plan as he sees it. Further hearings may be held at this point, either to resolve controversy or to inform interested parties of the general characteristics of the plan.

This step may involve several years of research and planning by the Corps. It is usually the most time-consuming of any particular step in completing a project. Corps official have emphasized that this step, more than any other, is the best opportunity for citizens and groups to change a project design. Actually, much of a group's work has already been done if they have been involved as previously outlined. However, in most cases, citizen groups do not become cohesive and interested until the time of the public meeting (Step 5).

The time required to complete Step 6 is its saving grace. Environmental groups can become organized and effective during this step. It doesn't take long for an efficient and active group to lay the ground work in the early steps and catch up to Step 6. Then citizens can bring their ideas and facts to the District office with a full understanding of how the idea got started, what the possible economic and environmental effects are, and what viable alternatives to the problem are. In short, if a proposal has reached Step 6, a citizen group can still start without any loss of effectiveness. We don't suggest waiting until now, but if people aren't together until this time, there is no better time to get involved.

In Step 6, the Corps is completing the project feasibility study by tying together ideas with facts and figures. This is a tremendous opportunity for a group to substantiate its own ideas with its own studies and conclusions. A citizen group should have engineering, economic, legal, and ecological expertise if it is to change the feasibility study. Sometimes, sufficient data may be available for a group to conduct its own research on the proposal. Also a group should obtain from the Corps the alternatives as they are finished, then study them and have competent people comment on them. Or a group may want to do both. In either case, both the Corps and citizen organizations should keep abreast of each other's developments and exchange their findings.

In some cases, the Corps may seek advice from consultants or hire an organization to do a portion of a study. The Corps should communicate this fact to all interested parties. Perhaps a consulting or research firm acceptable to both the public and the Corps can be hired. This could eliminate the inherent bias of studies done individually by the Army and citizen groups. However, most consulting firms are contracted to come up with a solution that maximizes the interest of the contractor, so the chances of obtaining a mutually acceptable party is very slim.

It is during Step 6 that a rough draft of the environmental statement (or "102 Statement") is formulated by the Corps based on data collected during the previous steps. As the project survey is carried out, various Federal and state agencies are notified and asked to comment on the project plans. These comments and those of cooperating environmental groups are synthesized into a draft statement along with the Corps' own studies. These "102 Statements" often contain appendices with letters and recommendations from the various federal and state agencies with feedback from the Corps. A Corps of Engineers Environmental Statement* will contain sections under the headings:

1. Project Description
2. Environmental Setting Without the Project
3. The Environmental Impact of the Proposed Action
4. Any Adverse Environmental Effects Which Cannot be Avoided Should the Proposal be Implemented
5. Alternatives to the Proposed Action

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* The Corps document for preparing Environmental Statements is contained in the Appendix as EC 1165-2-98 and ER 1105-2-507.

6. The Relationship Between Local Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity.
7. Any Irreversible and Irretrievable Commitments of Resources Which Would Be Involved in the Proposed Action Should It Be Implemented
8. Coordination With Other Agencies

These sections include the five points mentioned in Section 102 of the National Environmental Policy Act of 1969. A citizen group making its own environmental assessment may wish to follow the above outline, since it will provide not only a thorough measure of the possible environmental impact, but also a study directly comparable to that done by the Corps. Hopefully this would lead to an informal meeting to consider the results of both studies with a mutually acceptable draft, the end result. The idea is to get people together, which is an absolute requisite to preserving and improving our environment.

While we have been preaching the idea of unceasing cooperation with the Corps, we should not be so naive as to think that this is the only way to influence the Corps' environmental statement. The Corps has to seek the comments of various federal and state agencies, and a citizen group should ask two questions: How much influence do we have in the concerned Federal and state agencies? How can we approach them to maximize our impact? As a group has gathered information, hopefully it has sought the data and advice available from such agencies as the Department of Interior, Department of Transportation, the state pollution control agency, state water resources council, state recreation council, state fish and wildlife service, and others. An efficient conservation group should not only seek information, but should also feel confident in giving new information back to the various agencies. This essentially answers both questions. By supplying new and valid scientific information, a competent citizen group gains substantial influence in an agency and at the same time, it maximizes its effect since providing pertinent environmental information to the public is a primary function of many federal agencies. Citizens should make personal contacts in each agency, both federal and state, and maintain a constant liaison with dependable staff members who have the time and interest to consider carefully the group views. It is very advantageous to have an"in" in a strategic position within the various government bureaucracies.

RETROSPECT: STEPS 1 THROUGH 6

We have just examined the first six steps of an Army Corps of Engineers project as outlined in the Corps pamphlet EP-1120-2-1, and we have included in each step suggestions for fostering an air of mutual trust and respect between the Corps and public organizations. We have also tried to demonstrate some of the specific approaches a group should undertake to have its views included in the Corps' initial survey study. Each Corps proposal and project is unique in its economic and environmental impact, hence, this book should not be construed strictly as a "cookbook" for all Corps projects; rather, it should serve as a catalyst for new ideas and approaches citizens can use to insure that all economic, environmental, and sociological factors are considered in the planning of all civil works projects.

The first six major steps could be considered the "idea and hypothesis" stage of civil works projects. Many of these ideas get no farther - only about 40 percent of all proposals studied are authorized for construction and only 25 per cent are actually constructed. Many of the feasibility surveys (Step 6) clearly demonstrate the economic unfeasibility of a proposal and the idea is mothballed by the Corps--sometimes for good and sometimes to be reviewed again when there is renewed public interest. It is in the feasibility survey that ideas are substantiated or refuted by scientific fact and engineering studies From Step 6 on, there are concrete economic, environmental, and engineering facts which can be studied and commented on by citizen groups. General ideas are difficult to implement once the initial survey is completed, but *facts* which explain more precisely the impact of the project--economically or environmentally--can be included at any time in the project planning and design.

PREVIEW: STEPS 7 THROUGH 12

Assuming a project with unresolved controversy will now proceed toward authorization, a conservation group must considerably expand its base of operations to be effective. The project plans have been primarily in Corps offices, but now our governmental system of checks and balances (sometimes grossly unbalanced) comes into play. The project plans must pass under the eye of a multitude of Federal state and local agencies, and the effectiveness of a citizen group in communicating its findings to these agencies is often reflected in the comments of those agencies on the proposed project plans. This method of indirect influence has been clearly demonstrated by the Columbia River Conservation League as a very effective means of changing or stopping a project. The fact that a group may have to work through other agencies to get its evidence included in the project plans does not imply reneging on its relationship with the Corps, especially with the District office. Cooperation with the District office must continue at all times. The Corps must be made aware that a citizen group is actively involved with the other agencies who are reviewing the project. There are times when the District Engineer is not receptive to public input, particularly after he has spent years studing the project. In these cases the first logical alternative is to work indirectly through such State offices as that of the Governor, water resources agency, department of fish and game, ecology commission, and in the Federal offices such as Department of Interior and Office of Management and Budget (OMB). An important point for conservation groups to remember is that a State Governor essentially has veto power over any Federal project planned for his state, regardless of whether the District Congressmen or State Senators favor the project. Citizens would be wise to maintain liaison with the governor's office and the various state offices; then as a project proceeds toward the Federal level, contact should be made with the relevant offices within OMB, Department of Interior, and other agencies. The next alternative is for citizens to write directly to the Chief of Engineers explaining that there is an apparent lack of cooperation between the public and the District office and outlining the areas of conflict. The Chief usually replies very swiftly to both the District office and the public to insure total public participation. Both those alternatives should be used by the public.

Following the completion of the feasibility survey, the procedural motion of a project becomes increasingly complex. (See Civil Work Projects flow diagram at end of Chapter II.) The Corps, state and other Federal agencies are all reviewing and commenting on the economic and environmental aspects of the study. However, the issue citizens should be concerned with--supporting changing or stopping the proposal--is not involved. The fact to remember is that environmental groups have more opportunity to influence the project plans in some steps (9,10,11) than in others (7 and 8). For example, let's say that a project survey has just left the District Office for review by the Division Engineer (Step 7). The Division Office is the first review level for Corps projects and they are usually better staffed with environmental personnel than the District offices. If there are controversies surrounding a project this is a good place to appeal them, as the Division can read the plans back to the District for restudies. If the plans proceed on to the Board of Engineers for Rivers and Harbors for review with still controversial issues, citizens should contact the Board in writing and in person if possible.

The Board of Engineers likes to be considered the "conscience of the Corps" and will avidly claim that they have,... "killed more Corps projects than any environmental group anywhere." The Board is a statuatory agency established by the enabling act of 1902 to review the preauthorization reports of all projects requiring specific legislation. The Board has no authority on projects already authorized. They claim to be immune to all political pressures and therefore completely objective in evaluating individual projects. Also, Congress cannot authorize a project without the approval of the Board.

The Board of Engineers will take action on a specific project for any of the following reasons:

1) a project report is not in accord with established law or policy. For example, there were not enough public meetings

or hearings, or if the hearings were held so long ago that the public opinion has changed, thus requiring new hearings which have not been held.

2) a controversy surrounding a project report is such that it can not be settled in the District by facts alone. This was the case on the Snoqualmie survey in Washington State and the Sabine river in Texas.

3) when environmental interests feel local politics have precluded a fair environmental or economic evaluation of a project, especially by state and local governments.

The Board does welcome citizen studies and comments and will call for restudies and/or new public meetings when they feel there is genuine public concern. The Board of Engineers can be a crucial turning point for any controversial project if citizens get them the facts. However, the Board chooses to remain somewhat secretive and works primarily behind the scenes and out of the public limelight. Perhaps because it is relatively inconspicuous, and it avoids publicity, one might wonder if the board is really as apolitical as it claims to be. In any event, citizens should contact the Board if a project of their concern has any of the three deficiencies listed above.

Rather than concentrating exclusively on trying to impact the Board of Engineers for Rivers and Harbors in Step 8, a group should give primary attention to the various state and local agencies and the governor's office which will review the project in Step 9. The governor's office, which seeks the advice of the various local and state agencies and leaders to form a position, has veto power over any civil works project in the state and can be a strong ally for either project supporters or opponents. A governor can intervene in a project at any stage, while the Board of Engineers can intervene only prior to authorization (Step 2). In the long run, Step 9 is much more important than Step 8 as the impact made now within the state will have feedback until the project is completed, if it is authorized.

Once the report has been reviewed by the state agencies, it moves on to Stpe 10, the Secretary of the Army, OMB, and House and Senate Public Works Committees. A group should carefully plan the exact time for contacting these federal agencies. OMB can't be expected to provide comments on a project if they haven't seen the Corps' report, so citizen publications should arrive at OMB at the same time as the Corps proposal. In this case, a group should not waste time and effort trying to change the Secretary of the Army's mind (Step 10) but concentrate on setting up an effective communications channel with OMB and the Public Works Committees, both of which are more readily receptive to public participation. Sending a personal representative to Washington, D. C. or hiring a lobbyist to make personal appointments in each agency is a very effective method of conveying citizen views to key persons.

We have just discussed a short example of a project's motion through government channels to demonstrate that there are certain steps and agencies that citizen groups should especially prepare for. These are steps in which citizens have the best chance to affect a project plan. A group should ask these questions when preparing to deal with a particular governmental agency:

1) What is the function of the agency involved?
2) What criteria do they use in assessing the Corps' study?
3) What particular person or office within the agency will actually make the review?
4) What kind of data could citizens present to have the greatest effect?
5) Does the citizen group have enough scientific credibility to be effective with the agency involved?
6) Is there a point of view opposite that of the environmental group that should be explained or rebutted to the agency involved (e.g. the American Association of Railroads disputing the claimed transportation savings of a Corps' navigation project)?

If a group answers these questions correctly, it stands a reasonable chance of being listened to and seriously considered.

As an environmental group is organized and becomes involved in attempting to change or stop a project, one fact should become apparent: citizens need to be as economically aware as they are environmentally aware. Over a period of time, if serious questions are raised about the economic analysis of a project, a group stands a better chance of changing or stopping it than if only environmental questions are raised. However, the economics and ecology of a project are usually directly related. In more than a few cases, the Corps has minimized a project cost by failing to include mitigation and/or replacement cost for environment damage in its project costs. This raises the benefit-to-cost ratio and in many economically marginal projects, this increase may be enough to justify the project economically. Whether the benefit/cost ratio is 1.5 or 1.01 to 1, the analysis of benefit and costs done by the Corps should be studied carefully. If this requires hiring a competent economist, then one should be hired, or the organization may have the experienced persons required within its membership. Factual and valid economic information supplied by citizens can aid the Corps in future studies of the project and can be helpful to OMB, which reviews each project's economic anaylsis in deatail. If a group finds costs that the Corps has overlooked, every effort should be made to have them included in the pre-authorization studies.

We shall now move to the pre-authorization steps, Step 7 to Step 12. Again we point out that a citizen group must diversify its approach to affect a project's plans significantly. Environmentalists must work both with the Corps and with the various Federal state and local organizations that are consulting on the proposal, and they must use an economic approach whenever possible, as well as an environmental approach.

STEP NUMBER SEVEN: REVIEW BY DIVISION ENGINEER AND ISSUANCE OF PUBLIC NOTICE

The Division Engineer reviews the report of the District Engineer and transmits it to the Board of Engineers for Rivers and Harbors in Washington, D.C. for further review. The Division Engineer also issues a public notice to all parties known to be interested in the investigation, explaining the report and informing concerned parties that they may present their views directly to the Board of Engineers. He also announces a place where the report can be examined or purchased if desired.

Citizens' groups who have made their interest well known to the Corps of Engineers should be among the recipients of the Division Engineer's notice. Failing that, such groups may obtain the report from the Corps office. Conservation-minded organizations will, of course, want to scrutinize the Corps' findings carefully to be sure that all environmental and economic aspects of the proposed project have been given full consideration. When the report is not satisfactory in ecological and economic areas, such shortcomings should be brought to the immediate attention of the District and Division Engineers, to the Congressmen and Senators, and to the Board of Engineers for Rivers and Harbors. Since some projects have been challenged successfully on legal grounds, citizens should also ascertain whether or not all relevant laws are being complied with including the National Environmental Policy Act of 1969 and the Fish and Wildlife Coordination Act.

An economic evaluation of the Corps report should have been prepared by an independent group at this point. Those with expertise in economics should be available to conservation groups to check figures, to be sure that all costs have been listed, and to satisfy themselves that the alleged benefits of the project are realistic. Absolute accuracy in the citizens' report is as important as accuracy in the Corps' own report. Economic, legal and environmental aspects of water resource projects are covered in greater detail in Chapters 3, 4, and 5 respectively.

STEP NUMBER EIGHT: REVIEW AND HEARINGS BY THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS OR THE MISSISSIPPI RIVER COMMISSION

The Board of Engineers is required by law to review all survey and review reports of the Corps of Engineers except those under the jurisdiction of the Mississippi River Commission. The Board or Commission may hold public hearing before making its recommendations to the Chief of Engineers. As we explained in the Preview: Steps 7 through 12, citizens' groups can do much to convince the Board of the need to hold such hearings by presenting evidence that the report has overlooked important environmental, economic, or engineering issues relating to the project or by demonstrating widespread public concern. Spokesmen for citizens' groups whould present all available written statements from their organizations and send copies to the news media, and to the Board of Engineers preferably in person. A group which has labored consistently to make its views known at the District and Division levels stands a better chance of influencing the Board of Engineers than does a group formed hastily at this stage in project development. The Board will not call a public meeting unless it perceives a definite unresolved controversy. In these instances, it will carry out its own investigation of the project.

STEP NUMBER NINE: PREPARATION OF PROPOSED REPORT OF THE CHIEF OF ENGINEERS AND REVIEW THEREOF BY THE AFFECTED STATE AND FEDERAL AGENCIES

After the Board of Engineers (or Mississippi River Commission) has reviewed the project report, it forwards its recommendations along with a statement of environmental impact and the project survey report to the Chief of Engineers who, in turn refers these studies to the Governors of the affected states and to interested Federal agnecies to obtain their views of the proposed action. Among the Federal agencies often consulted about Corps proposals are the Office of Management and Budget, the Departments of Interior, Transporation, and Commerce, the Federal Power Commission and the Appalachian Regional Commission the Environmental Protection Agency and the Council on Environmental Quality. The Governor and Federal agencies are expected to send their comments to the Chief of Engineers within ninety days. Final drafts of the environmental statement and project report are then prepared. These final drafts are public information and should be studied in detail by citizens. Environmental groups must work in anticipation of this step, forwarding letters and position papers to their Governor and Federal agencies before the Board's report is received by those offices. Often the State and Federal agencies have no data other than the Corps' own report on which to base their approval or disapproval of a project; hence they may welcome responsible outside studies made by citizens' groups.

The Department of Interior, the Council on Environmental Quality and the Environmental Protection Agency have primary responsibility for considering the environmental effects of water resource projects. Interior's Fish and Wildlife Service can be a particularly valuable friend to the citizens' group, provided it is well-supplied with factual material backing the group's opinions. Representatives of the environmental group may want to make personal contact with officials in the Fish and Wildlife office as well as with other relevant agencies.

If any Federal or state agency raises serious questions at this step, the project may become questionable. This step in the process is, in other words, an excellent point at which to slow the whole proposal down to allow a closer look at the problem areas.

Again we stress the importance of keeping in constant written and verbal contact with the various state agencies concerned with the project, and the Governor's office. In this step the state reviews the project and its comments,and recommendations will reflect the views of the Governor and hopefully the environmental groups involved.

STEP NUMBER TEN: TRANSMITTAL OF REPORT TO THE OFFICE OF MANAGEMENT AND BUDGET

This step has within it several composite motions. First, the Chief of Engineers receives the comments of the Governor and concerned Federal agencies. He then completes his own report and submits it to the Secretary of the Army. The Secretary then drafts a letter to Congress and sends the preliminary draft, along with the report of the Chief of Engineers and all other pertinent papers, to the Director of the Office of Management and Budget.

The Budget Director's responsibility is to determine the project's relationship to the President's public works program and to evaluate the general economic feasibility of the action.

OMB is, of course, particularly receptive to economic questions regarding a Corps proposal. Its Water Resource Project Section will welcome independent studies and letters, but it is most likely to be attentive to calls from personal representatives of citizens' groups concerned about a particular project. Spokesmen should identify the individual in the OMB Water Resource Project section responsible for reviewing the project of their concern and communicate directly with that person. The Public Works Committees of the House and Senate probably give greater weight to the ideas and questions raised by OMB than to any other reviewing agency.

Any economic questions or peculiarities should be brought to the immediate attention of OMB officials. There is no more efficient way to stop or delay a questionable project than to question its economic analysis or otherwise demonstrate that the project will return less than a dollar benefit for every dollar invested. The success of the Columbia River Conservation League in halting a Corps project was a result, in large part, of its ability to show conclusively that the Corps' economic analysis overlooked certain costs, and claimed benefits that could not possibly accrue from the project. Some civil works projects have a high benefit- cost ratio and are a good public investment Where large Federal projects are proposed, it is essential that careful studies be made to assure that all costs have been included in the report--such as full mitigation for any fish and wildlife loss, funds for archeological work on the project area.

and appropriations for developing future recreations areas and fish and wildlife habitat. While these costs may not affect the high benefit-cost ratio significantly, they will insure an effort to replace, as nearly as possible, what would be lost with construction of these larger projects. Once a project has been authorized both the Corps and Congress are reluctant to include new environmental costs unless clearly justified. Since there is no guarantee that funds can be obtained after authorization (Step 12), a staunch effort should be made to have them included in the pre-authorization study.

STEP NUMBER ELEVEN: TRANSMITTAL OF REPORT TO CONGRESS

Upon receiving the comments of OMB, the Secretary of the Army transmits the report of the Chief of Engineers, along with other pertinent papers and comments (possibly including those of concerned citizens' groups, if they have been effectively presented) to the Congress. The Secretary's own evaluation of all data available at this point determines whether or not he concurs with the OMB report, citizens' independent studies, and other materials in his recommendations to Congress.

Congressmen seeking to provide their districts with the economic boost of a Corps of Engineers project may try to play down the negative comments in the Secretary's report to Congress. An environmental group should know exactly where key Congressmen stand on the project proposal, and whether they are receptive to environmental or economic questions about the plan. All lobbying efforts to gain influence should be concentrated upon Congress at this point. Congressmen and Senators of the area involved should already be well aware of the project pros and cons as a result of citizen initiative. Environmental groups would do well to make personal contact with the Senators or Congressmen concerned or their legislative assistants. Often staff members are more effective in communicating citizen views to their boss than a lobbyist - don't demand a session with an elected official; if he's too busy, talk with his staff.

Next in importance is to make written and personal contacts with the House and Senate Public Works Committees. In Step 12, these committees will hold hearings and determine which projects should be included in an omnibus bill and which projects should be voted on separately.

It is our experience that citizen groups do not take full advantage of the input opportunities offered by the Public Works Committees. These committees meet periodically to review individual projects, so obviously it behooves an environmental group to contact individual committee members. In one instance these members had no knowledge whatever of a major Corps of Enigneers project that was still presented to the Senate Public Works Committee for inclusion in an omnibus bill. If time is short, the more environmentally aware members should be sought out. They should be presented with a concise, written report explaining the group's views and the views of the Corps. As always, the approach should be one of respect and cooperation. In most cases citizen groups will be more informed than the official or his staff, and they should not be made to feel they're "dummies," or that the group is a godsend for saving our environment. Citizens should not continually harangue staff members for answers or position statements; they've usually got more than they can do in the time they have. If the public has made its case effectively, Senators and Representatives will be aware of the public views.

STEP NUMBER TWELVE: AUTHORIZATION BY CONGRESS FOR CONSTRUCTIION OF THE PROJECT

Upon receipt of the Secretary of the Army's report, the House and Senate Public Works Committees may hold hearings aimed at formulation of a bill including a recommendation for project authorization. The Secretary's report may be printed as a House or Senate document, thereby becoming known as the project document. Actual authorization usually comes about as part of an omnibus rivers and harbors bill.

Citizens must keep track of the bill's progress in the Committee on Public Works. Spokesmen for the group should ask the Committee's permission to testify at its hearings. The group representative should be an effective speaker and should present a short, concise and factual summary of the group's views on a proposed project. Additional detailed information can be inserted into the record of the hearings without being presented orally.

Committee members are not usually overzealous about attendance at hearings. Consequently it will be necessary for citizen representatives to follow up their testimony with a personal visit to the Congressman's or Senator's office as in Step 11 prior to the hearings.

The Corps has by now exerted considerable effort in studying, planning, and promoting the project, and if negative aspects have not been thoroughly publicized by concerned citizens, Congress will probably proceed to authorization with very little ado. In the case of omnibus bills, many favorable projects may be included along with a few marginal ones. Rather than risk losing the entire bill, Congress will sometimes overlook the questionable projects and authorize the total bill.

Although authorization marks the end of the best opportunities for citizen involvement to change, delay, or halt a project, it is by no means the last opportunity. If a project is authorized, it is assumed to be economically feasible. That is, each federal dollar invested will return more than that dollar in benefits. The inputs of citizen groups from this point on are usually limited to engineering or environmental facts. The price has been set on the project, although many civil works projects overrun their cost projections significantly. If there is substantial evidence to warrant more study or to change the economics of the project, it can be done. The project plans will be reviewed by OMB three more times prior to construction, and OMB is always receptive to new and valid economic evidence affecting a project.

At least two Corps projects have been stopped recently after construction was well underway. The Cross-Florida Barge Canal, authorized in 1942 and started in 1964, was stopped early in 1971 with the canal about one-fourth completed. President Nixon ordered construction to cease several days after the Environmental Defense Fund (EDF), acting in behalf of several citizens' groups, obtained a preliminary injunction to stop the Corps construction. Gilham Dam on the Cossatot River in Arkansas was stopped by a judge. Both projects were halted by injunction for environmental reasons.

There is another alternative citizens can use to provide for adequate study of the economic and environmental problems of a questionable project. If the bill has progressed to Congress without adequate funds for comprehensive design studies and mitigation for ecological damage or replacement of lost recreational resources, Congress can pass amendments to the bill which will insure these funds. This would require some strong and influential Congressional allies to a citizen's group, but it can be accomplished. If this is the only way of insuring that funds are appropriated, then it should be pursued to the fullest.

AUTHORIZATION TO CONSTRUCTION: STEPS 13 THROUGH 18

STEP NUMBER THIRTEEN: ASSURANCES OF LOCAL COOPERATION

The authorized project now goes to the District Engineer who will begin work on scheduling and budgeting for design which may take several years. Local interests are informed that they must provide the Corps with formal assurances of their cooperation in providing such things as rights-of-way, real estate acquisition and recreation cost-sharing. Failing such cooperation, the project will be placed on an inactive status. Flood contol projects may be de-authorized if assurances of local cooperation are not made within five years of the Corps' request for assurances.

In recent years, increasing numbers of cities and towns have refused assurances to the Corps, thus killing for a time, a number of civil works projects. If a citizens group is actively involved in local politics it can be very effective in changing or stopping a project, or if it desires a certain project, in working to insure that local cooperation is given to the Corps. The importance of understanding the local political climate is obvious in this step and environmental groups should make a concerted effort to gain a voice in their local political units.

STEP NUMBER FOURTEEN: REQUEST FOR PLANNING AND CONSTRUCTION FUNDS

Funding of a project occurs subsequent to and independent of its authorization. Requests for planning and construction funds will be reviewed by the Office of Management and Budget, and if in harmony with the President's budget policies, will be sent to Congress as part of the President's budget and considered by the Appropriations Committee.

A group with considerable political and economic expertise may be able to convince OMB at this point that the project is not in conformity with the President's budgetary policies or more simply that it is not economically feasible. Success in this endeavor will depend on effective personal presentation of new data and may result in delaying the project for a time. The Corps of Engineers will consider the views of OMB, but it is not required to follow its recommendations. OMB's comments are forwarded to Congress with the Corps' report and other reports. Congree can pass projects with a benefit-cost ratio less than one over the objections of both OMB and the Corps.

STEP NUMBER FIFTEEN: APPROPRIATION OF PLANNING AND CONSTRUCTION FUNDS

After hearings of the Appropriations Committees of the House and Senate, which consider the Department of the Army Civil Works Appropriations, a bill will be reported out of committee and referred to the full Congress for passage. If passed by Congress, it will go to the President for signature. Authority and funds are thereby given to the Chief of Engineers to initiate detailed planning and construction of the projects described in the omnibus bill.

Citizens seeking to influence the vote of Congress on a proposed Corps of Engineers project may submit their information and opinions to the Appropriations Committee and to key Congressmen who might wage a floor fight on behalf of the concerned groups. Such floor debates are rare, however.

Like the authorization bill, the civil works appropritions is an omnibus bill - that is, all projects for that year are lumped together. Specific projects are usually given only cursory examination by the Appropriations Committees of the House and Senate, and to most Senators and Congressmen, separate projects are only names with no adequate description. The President cannot veto specific project appropriations; he can only sign or send back the entire package. Consequently, a great deal of lobbying and protest from citizen groups is necessary to induce the Appropriations Committees to remove a project from the bill. But this can be accomplished, particularly if an organization has a synpathetic Senator or Representative on one of the Appropriations Committees. If this kind of action is the only alternative, every effort should be made to make it a reality.

STEP NUMBER SIXTEEN: PREPARATION OF DETAILED PLANS

Before construction of the project can be started, detailed plans, specifications, and cost estimates are prepared by the District Engineer and reviewed by the Division Engineer and Chief of Engineers. Formal assurances of local cooperation from local interests must be received at this point and approved by the Secretary of the Army.

This step may take more than two years to complete and is an excellent opportunity for public participation in updating the engineering economic and environmental aspects.

Corps officials have gone so far as to suggest this would be a good time for a final public meeting, provided citizens can put forth useful engineering, economic and environmental facts and not ideas or generalities. The suggestion has been made very cautiously, however, as the Corps has by now thoroughly studied the alternatives and feels it has the best solution. However, the public should not hesitate to provide any information it has discovered, including economic, engineering, and environmental facts. The Corps is preparing an updated environmental statement and the advanced plans and specifications for the project. Previous experience has taught them not to overlook any valid input to the final design of "102 Statement." The opportunity for significant citizen participation in the advanced design study has also been emphasized by various Corps officials. Advanced design studies repeat the planning process of the best alternative chosen by the Corps. Unresolved issues can make this planning more involved and responsive to public sentiment and opinion. The District is allowed to make minor changes in the project plans without further Congressional action--this term minor of course is subject to much interpretation. However, the District can be forced into or may recommend major changes which require further Congressional action and a good place to start is during the annual appropriation hearings in Washington when the Corps testifies for advance engineering and design funds. The point to be made here is that the District does not contact the public as a matter of course in the advance engineering and design stages. However, groups can influence and stall the project from being constructed if contact is made with the District and local governments which must give the Corps the local assurances.

If a citizen group's main objective is to stop or delay a project, they should stress any engineering, economic, or environmental deficiencies that have arisen since authorization. A project can also be stopped or delayed if citizens can prove, in court, that there are unresolved ecological controversies inherent in the project. If the public has accepted the fact that the project will be built, it should work with the District Engineer to insure that proper recreational facilities are developed and required local funds are provided, that fish and wildlife habitat replacement plans are the best available, that areas are included for public use as well as refuge areas, and that funds will be allocated on a continuing basis for maintenance, operation, and improvement of the project's recreational resources.

STEP NUMBER SEVENTEEN: INVITATION TO BID

Upon completion of detailed plans and specifications, qualified contractors will be invited to bid secretly on constructing the proposed project. A contract will then be awarded to the eligible low bidder for construction of the project in accordance with the plans and specifications.

As we emphasized earlier, a state Governor essentially has veto power over any civil works project within his state. This is one of the few alternatives remaining for citizen groups. The Corps still must utilize information from the state resources agencies; therefore, an effective environmental group can work through these agencies and the Governor's office to delay or stop a project--provided there is sufficient evidence for doing such. In some cases, effective action entails publicizing the possibility of legal action to stop the project, or actually filing suit. Citizens should not hesitate to seek court action if their arguments are valid and they are sure they can present a strong case. An environmental lawyer or a lawyer with experience in related matters should be hired. Citizens can also contact national organizations such as the Sierra Club or Environmental Defense Fund for information on how to proceed with legal action.

STEP NUMBER EIGHTEEN: CONSTRUCTION OF PROJECT

After award of the contract, the successful bidder will begin construction. Upon completion of the project, Federal, State, and local agencies determine a final sharing of costs and the proper agency assumes responsibility for the operation and maintenance of the facility.

There is one recourse left for the environmental group, if it feels the project has had a serious environmental impact, and that is an after-the-fact effort to gain monetary compensation for environmental damages which can be proven in a court of law. A law suit does not, however, prevent or undo any undesirable environmental effects of a Corps of Engineers project. The opportunity for such a preventive action is long past, but corrective action is still possible such as mitigation for fish and wildlife losses or other project incurred damages. Environmental groups should remember that they must pay court costs if they lose a suit. In some cases, they may also be subject to countersuits by project beneficiaries if they lose a courtroom decision. However, this is the exception rather than the rule. There are increasing numbers of well-informed environmental lawyers available to consult citizen groups on the action they should take in their special case.

A citizen's group can also perform a valuable service by keeping a careful record of the actual environmental impact as the project is constructed and operated. Precision measurements of the real impact are difficult to obtain, but many studies are now underway on the post-construction effects of various water resource projects. These studies will be of great benefit to both the Corps of Engineers and the public as a reference for future projects. Citizens should also document their methods of opposition to a project. If they win or lose, this information will be of value to other groups--even the same group, when future civil works projects are proposed.

"SMALL PROJECTS" OF ARMY CORPS OF ENGINEERS

"Small Projects" of the Corps of Engineers are those water resources projects which require a Federal expenditure of less than one million dollars, although local concerns can provide any amount of additional money to increase the project size. Usually the local interests provide 50 percent or less of the Federal expenditure.

The difference between these projects and those of greater costs is that "small projects" don not require Congressional action for authorization and are not reviewed by the Board of Engineers. The project remains within the Army Corp of Engineers. Each year the Corps asks the Office of Management and Budget and Congress for about $9 million to fund these projects, and the Corps allocates this appropriation as it sees fit.

"Samll projects" follow the general outline of procedures explained in the "18 Steps" except they do not go before Congress, Environmental impact statements are also required. The fact that these projects are small in terms of cost does not imply their environmental effects are also small. The Detailed Planning Report (DPR) of small projects should be obtained by interested citizens and carefully studied to determine the environmental effects and the appropriate action to be taken if the environmental impact has not been adequately studied.

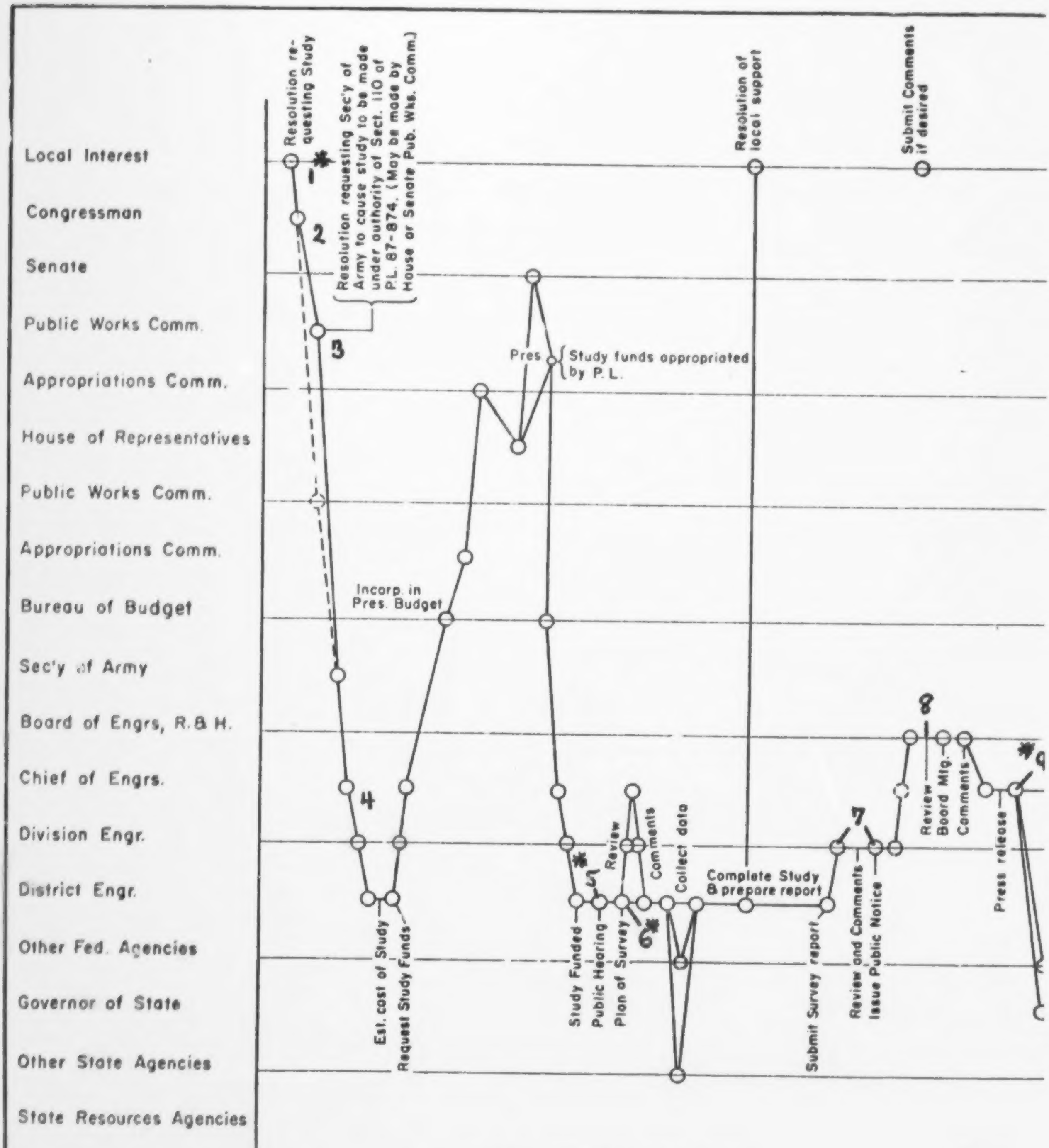
Emergency projects fit under this heading also. These are primarily after-the-fact projects such as the snagging and clearing of streams and channels or other emergency measures. Citizens should keep a careful eye on these operations--often the method of getting to a clogged stream or channel is very destructive, more so than the actual "emergency" work itself. It takes a bull-dozer only minutes to change the ecology of a streambed or riverbank.

If the eighteen steps leading to completion of a Corps of Engineers project contains any single message for the citizen seeking to influence the outcome of such projects, it is this: get started early. A total involvement in meetings, project formulation, and the use of political lobbying tactics all along the way may bring desirable results if environmental groups are respectful, but tactful in the presentation of their case. Government engineers, economists, biologists, and attorneys should be matched with competent citizen engineers, economists, biologists, and attorneys. Corps staffers have made it explicitly clear that they are open to valid factual arguments, but are not at all receptive to emotional, opinionated rhetoric.

The Corps, the Congress, and the public are all important elements of the system of checks and balances in the spending of the taxpayers' money. The citizen can play an important part in the system by observing all parties carefully, evaluating how well they are performing their special functions, and providing information and pressure to encourage them to do better.

If you can't get started early, get started late, but at least get started. Congress won't soon stop authorizing civil works projects, nor should citizens stop their attempts to change them constructively.

The following two pages are a detailed flow chart of civil works projects. We have overlayed the "18 Steps" and "102 Statement" points



CIVIL WORKS PROJECTS

(Congressional authorization)

Notes:

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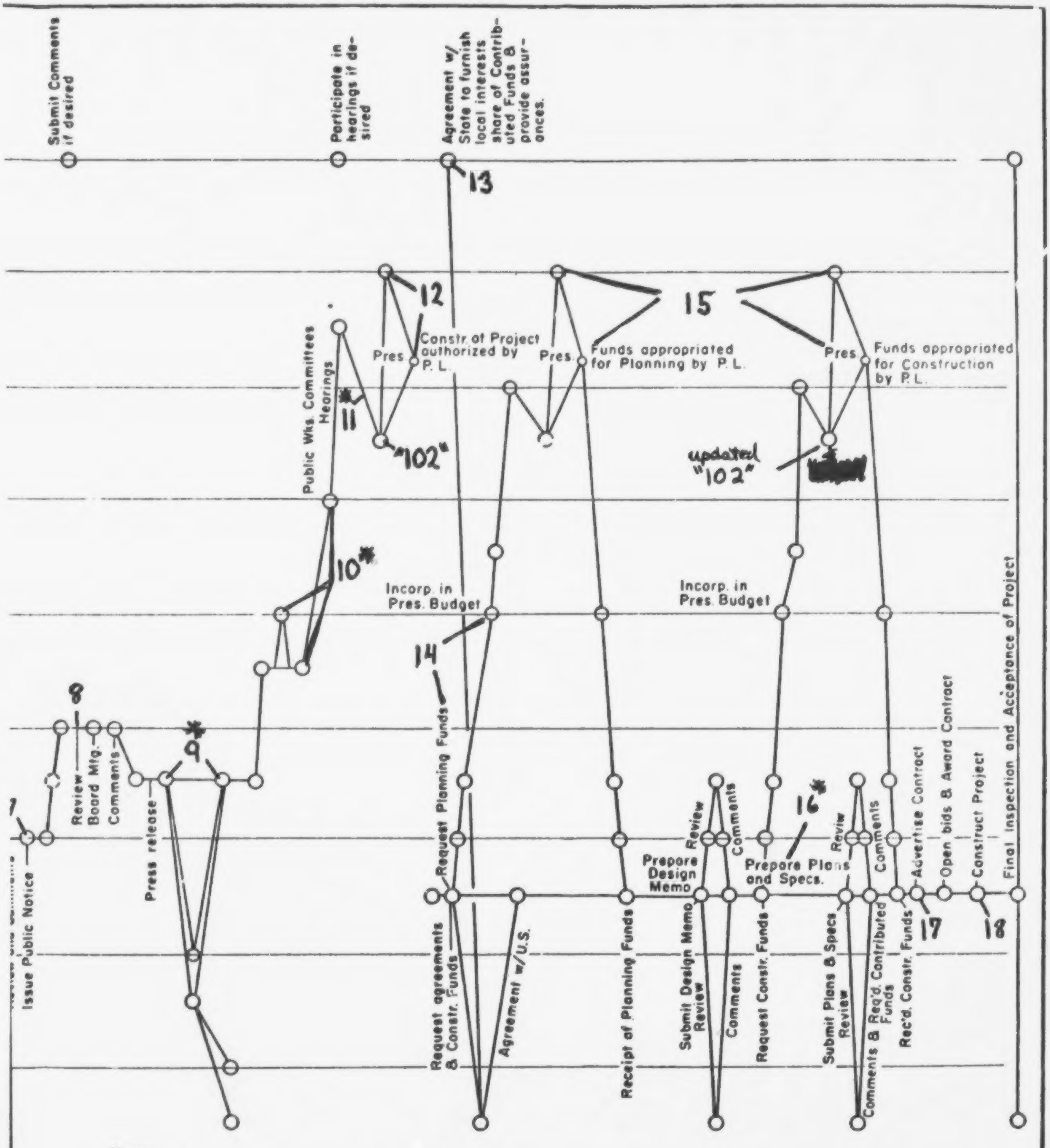
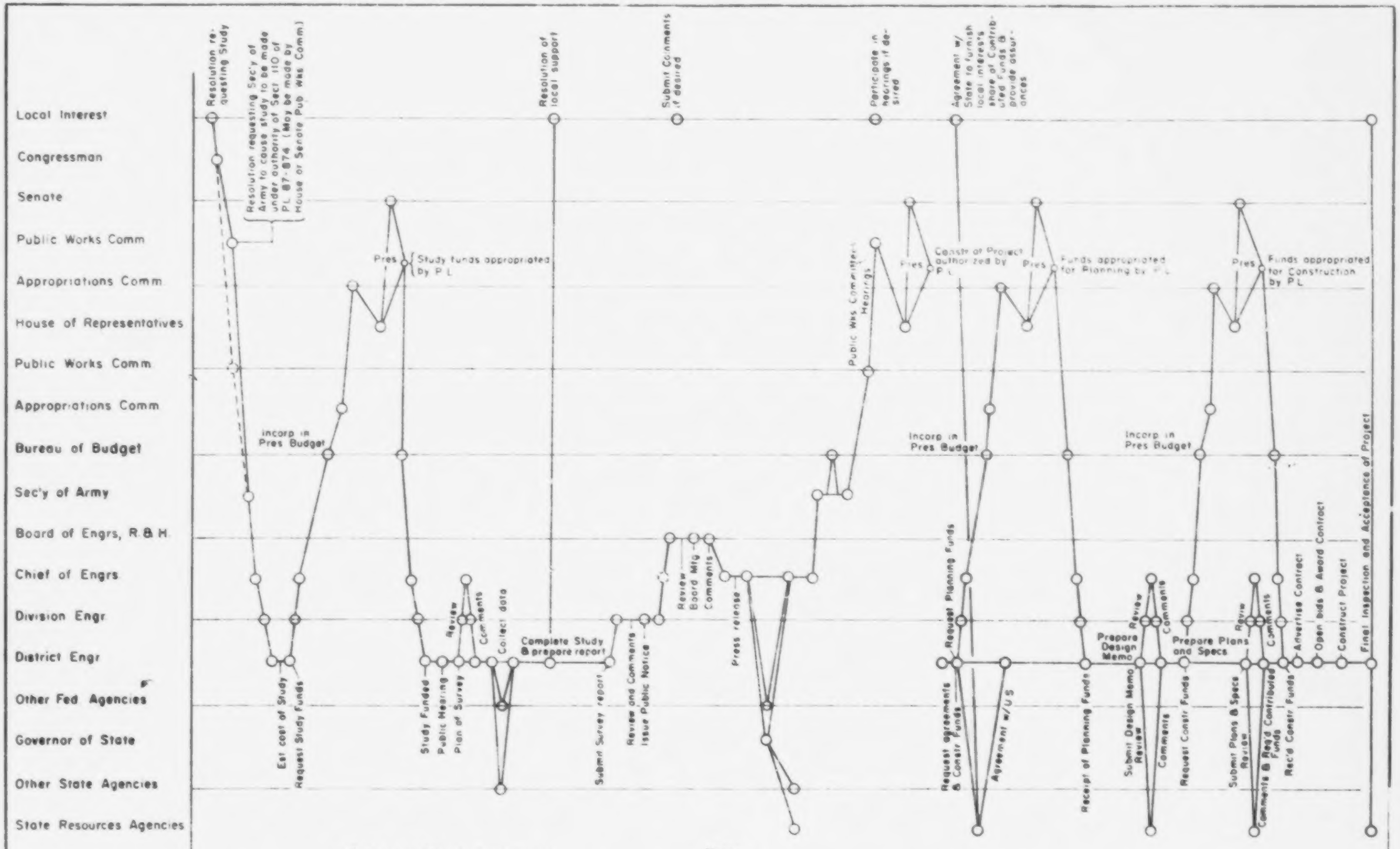

Submit Comments if desired
Participate in hearings if desired
Agreement w/ State to furnish local interests share of Contributed Funds & provide assurances.
13
12
15
Pres.
Constr. of Project authorized by P.L.
Funds appropriated for Planning by P.L.
Funds appropriated for Construction by P.L.
Public Wks. Committees Hearings
*11
"102"
updated "102"
[redacted]
10*
Incorp. in Pres. Budget
Incorp. in Pres. Budget
14
8
*9
1
Issue Public Notice
Review Board Mtg.
Comments
Press release
Request Planning Funds
Request agreements & Constr. Funds
Agreement w/U.S.
Receipt of Planning Funds
Prepare Design Memo
Review
Comments
Submit Design Memo Review
Comments
16*
Prepare Plans and Specs.
Request Constr. Funds
Review
Comments
Submit Plans & Specs Review
Comments & Req'd. Contributed Funds
Rec'd. Constr. Funds
Advertise Contract
Open bids & Award Contract
Construct Project
Final Inspection and Acceptance of Project
17
18

Notes:

1. Initial & additional funds must be appropriated each year for life of study or construction.
2. Report may be returned many times for revision.

Prepared for Marine Affairs Conference and Marine Exchange, Inc., by U.S. Army Engineer District, San Francisco



CIVIL WORKS PROJECTS

(Congressional authorization)

Notes

1. Initial & additional funds must be appropriated each year for life of study or construction
2. Report may be returned many times for revision

Prepared for Marine Affairs Conference and Marine Exchange, Inc., by U.S. Army Engineer District, San Francisco and have starred the most crucial steps that citizen groups should especially prepare for. This flow chart illustrates the actual complexity of completing a major project - there are about 105 steps leading to project completion. If this chart were enlarged considerably, it could easily serve as a "strategy board" for environmental groups.

The graph below, illustrating the opportunity for effective citizen participation, shows the necessity for people to become involved early in project planning, preferably before completion of Step 6. The solid line shows that the chances for public input directly to the Corps decreases with time. The broken line illustrates the opportunity for indirect inputs to the project plan via the other Federal and state agencies that review civil works projects. There are essentially two critical periods for citizen participation: 1) directly, prior to completion of the initial feasibility study (Step 6), and 2) indirectly, during the period of preauthorization project review by other concerned agencies and the Board of Engineers (Steps 9, 10, 11). Once a plan is authorized, the Corps of Engineers seldom incorporates any substantial environmental changes in the project design unless there is sufficient political or public pressure or new laws and regulations are involved. If the pressure is great enough, then Step 16 can be a significant opportunity for public involvement, as shown by the graph. The "idea and hypothesis" stage (Steps 1 through 6) and the "general engineering, economic and environmental information input period" can be considered "good" opportunities for citizens to be effective in project planning. Following authorization the opportunities can be considered "fair" at best, and most likely "poor"--even though a group may have some relevant engineering, economic or ecological data.

Now that we have discussed the planning process of Army Corps of Engineers water resources projects, it would behoove us to relate this discussion to several actual situations involving the Corps and citizen groups. The first case study concerns a proposed navigation project on the Columbia River in Washington State. It is an example of effective citizen participation before authorization through indirect methods. The second case study is that of the well-known Cross-Florida Barge Canal. In this case, an environmental group was successful in halting construction of a project that was one-fourth completed. This illustrates the legal opportunities for stopping ecologically-destructive projects more than it does actual participation in Corps planning procedures. Both citizen groups involved--the Columbia River Conservation League and the Florida Defenders of the Environment--were successful in attaining their immediate goals. In Chapter III, we shall discuss a third case study in which the project has been authorized, but on which construction has not begun because of public opposition (Allerton Park vs Oakley Dam).

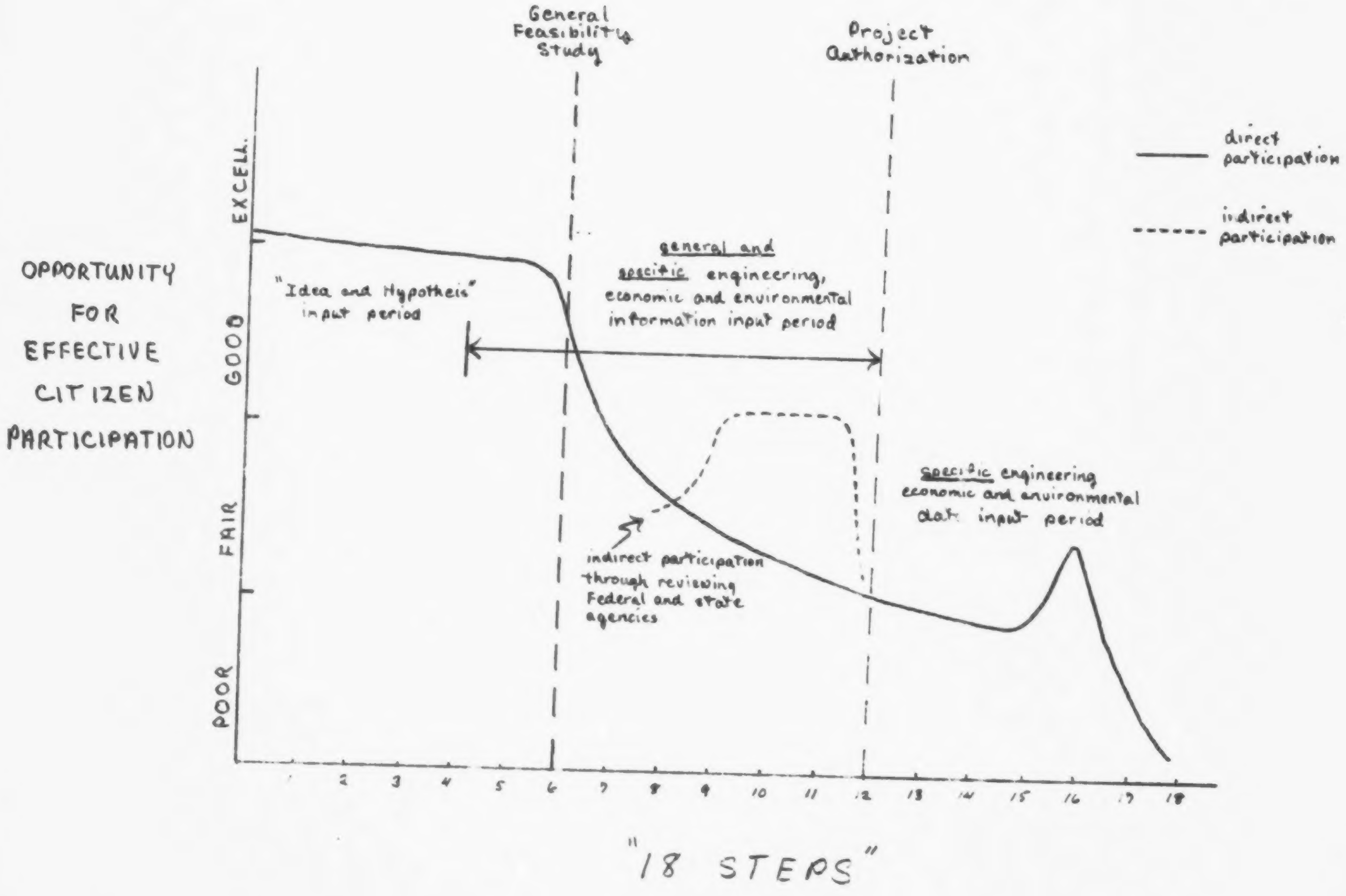


Fig. . Graph illustrating the chances for effective citizen participation in Army Corps of Engineers civil works projects. This graph is based, subjectively, on the suggestions of Corps personnel and on the attempts of citizens to participate in various steps.

CASE STUDY

Ben-Franklin Dam and Lock Project and
Extension of Navigation on the Upper Columbia River:
Successful Pre-Authorization Citizen Participation

The Columbia River, the last major river to be discovered in America, is no longer a river--with the exception of the 57-mile reach between Richland, Washington, and Priest Rapids Dam. Eleven dams (five constructed by Public Utility Districts, five by the U. S. Army Corps of Engineers, and one by the U. S. Bureau of Reclamation) have created a series of impoundments from the Canadian border to the Bonneville Dam near Portland, Oregon, making the "river" a series of lakes instead.

In 1932, the Board of Engineers for Rivers and Harbors published a "master plan" for the Columbia which included ten possible dam sites. The first evidence of the execution of this plan was the construction of Bonneville and Grand Coulee Dams, both begun in 1933, and most recently, the completion of John Day Dam in 1968. That leaves only the 57 miles between Richland and Priest Rapids Dam in a relatively free-flowing, natural state.

Opposition to this river development over the past 38 years has been relatively insignificant primarily because of the sparsely-settled areas involved and because the greatest benefits of navigation and power supply were realized by the more populous areas and industries west of the Cascade Mountains. Also, the public was not adequately aware of the "master plan" of the U.S. Army Corps of Engineers and the procedure by which the Corps obtains authorization, funding, and completion of a project.

The Ben-Franklin Dam is the last proposed dam on the Columbia. It is being opposed by a local conservation group on both economic and ecological grounds, as is the Corps' alternative plan--a navigation channel through the 57 miles of river. The approach used by the Columbia River Conservation League (CRCL) has been successful thus far in delaying the transmittal of the final feasibility study of the dam and in preventing Congressional authorization of the navigation channel. The multidisciplined, economic-ecological approach used by CRCL demonstrates that concerned groups and individuals can introduce their ideas and facts into the decision-making process of the Corps of Engineers thus saving public funds and preserving an ecologically diverse environment.

CRCL was formed in late 1968 on the premise that the funding of either of these projects would be ecologically unsound and an unwise use of public money. Since its inception, the League has been under the thorough and calculating leadership of John Sheppard. CRCL incorporated a variety of disciplines within its group in order to deal thoroughly and scientifically with the different aspects of water resource projects. It also obtained the aid and support of other environmentally concerned groups before making any public statements or reports. Many of the individuals in CRCL are research scientists within the Atomic Energy Commission reservation, through which the portion of the Columbia River in question flows. Their fields include ecology, chemistry, engineering, geology, and aquatic biology, and their expertise is evident in the materials they have published.

In the case of CRCL, both the dam and channel projects had advanced to stages (Step No. 9 for the dam and Step No. 10 for the channel) where successful input of information by a group would likely take the form of a "conservation battle," typical of situations in which the public is not concerned about, or aware of, proposed Corps of Engineers' projects until just prior to Congressional authorization.

CRCL realized that any local anti-project publicity would have to come from them since the only local paper and several regional papers supported the projects. The State's two Senators had made statements in favor of the dam as had two of the local Congressmen. CRCL's only ally at the start was a local radio station which provided free air time for the group's president, John Sheppard, to present arguments against the dam. (At this time the dam was the issue and the channel was of secondary importance.) Letter-writing by the group and individuals within it to all elected officials and concerned agencies was initiated and has continued to the present time.

On December 7, 1968, the Seattle District Engineer of the Corps of Engineers office conducted a barge tour of the proposed dam and reservoir site as a result of questions raised by separate groups and individuals. Although CRCL was embryonic at this time, it did manage to construct a "Tour Guide" of the river to point out to the 48 invited guests the fish, wildlife, archaeological, geological, and other natural resources that would be lost or damaged if the project were constructed. Thus, CRCL made its first impact upon the decision-making process. They had gained the permission of the District Engineer to present an obviously environmentalist point of view to many of the local proponents of the project and the Corps itself. The local pro-dam paper presented an even-handed front-page article about the efforts of CRCL to point out the environmental impact of the dam.

Prior to Congressional authorization, this is where most projects can be most effectively changed--on the local level and in the District Engineer's office. Most Corps projects are the result of local pressure groups pushing for a project, in this case the navigation interests on the Columbia River were the primary proponents. If these local interests can be convinced of the necessity of considering all costs of a project, more realistic benefit appraisals and the long-range effect of a project on the environment and the local economy, a much more economically and ecologically sound proposal can be presented to the Congressional Committees for initial study funds. At this point in the Columbia River planning, the primary local supporters and the district office of the Corps were aware of a well-organized group of concerned citizens who wished to have their ideas incorporated in the planning of the dam and reservoir project, to make clear the total economic and environmental effect.

A short time later, CRCL printed a publication in which they pointed out the variety of recreational advantages of the river in its present state and an economic analysis of the fishery resource of the area. This second publication was aimed directly at providing an economically feasible and viable alternative to a dam or a dredging operation. CRCL suggested designating this river section a National Recreation Area. Details of CRCL's plan included road and river tours, an archaeological museum, access to fossil beds, an atomic energy museum, wildlife observation and ways of increasing sport fishing and hunting. The proposal was presented in a way that made clear the economic gains for such an alternative. The report stressed both the economic gains and the fact that this is the last of its kind of wilderness recreation available in the northwest. CRCL's plan was distributed to all parties who had indicated interest in the project, and was an important factor in delaying public release of the Corps' final feasibility study. The data provided in the CRCL booklet was a surprise to many people. The stretch of river concerned has been partially closed to the public since 1943 because of security regulations. A regional TV station received permission to film the resources of this off-limits area and presented a 45 minute "special" which was shown twice throughout the state. Public response was tremendous. The real effect of this available information was difficult to measure, but CRCL felt it had a definite influence on the State Governor's Office as its official statement concerning the project followed the basic ideas of CRCL. The State legislature was--nearly unanimously--sympathetic with the views of CRCL. Several sporting magazines, along with William O. Douglas, Supreme Court Justice, published articles using this data which helped focus some national attention on the problem.

At this point it became clear that the final authorization and funding of Ben-Franklin Dam was in doubt. The Corps had originally planned to release its final feasibility studies in early 1969, but in early 1971, they still had not been completed. Factors contributing to the delay were a marginal benefit-cost ratio, increasing water resource interest rates and objections from CRCL. The prime benefactors of this project would have been the navigation interests on the Columbia from Portland, Oregon, upriver to Wenatchee, Washington. Seeing the delay of the Ben-Franklin Dam project, these navigation interests began pushing an alternative plan, the dredging of a barge channel through the 57-mile stretch of river and construction of three locks at dams upstream of the channel. In 1969, the Corps released its final report on the channel project with a benefit-to-cost ratio of 0.99 to 1, and was ready to present testimony to the Senate Public Works Committee (joined by the project's most avid supporters, the Inland Empire Waterways Association) asking for authorization of the project.

CRCL was not left behind when the Corps switched horses. In April, 1969, the Conservation League published an analysis of estimated costs and benefits of the proposed navigation project. Data used to prepare this analysis included not only the Corps of Engineers proposal, but also the criticism of the proposal raised by the American Association of Railroads (AAR), and other pertinent information. CRCL concluded that construction of the proposed channel and locks would not be economically justified, since the benefit-cost-ratio would be less than 1:1. The League's analysis of the Corps' report indicated that many errors had been made, exaggerating the benefits and minimizing the cost of dredging. CRCL listed 5 points to substantiate this view:

1) Benefits listed by the Corps of Engineers are highly speculative, inflated, and biased toward navigation.
2) The Corps' population growth estimates for the region were high, skewing population-dependent benefits higher than is realistic.
3) The Corps used the old water resource interest rate and should recompute the benefit-cost ratio using the new interest rate of 4-5/8%. (The rate has been raised again to 5-1/8% making the project even less justifiable.)
4) The Corps failed to consider the impact of the Canadian storage dams on the proposal. These would cause flow changes that would drastically reduce the amount of dredging necessary, or possibly eliminate dredging altogether.
5) Mitigation for fish and wildlife losses in the Corps' report was negligible, and no serious consideration was given for the potential fish and game losses.

CRCL severely criticized the 0.99 to 1 ratio and submitted an analysis of estimated costs and benefits to the Senate Public Works Committee as testimony against authorization of the project. This testimony was also sent to all concerned persons and organizations.

In an appendix to the CRCL analysis of the navigation project, annual benefits and the benefit-cost ratio were computed in several different ways and spelled out clearly for comparison. Using Corps data, the ratio was computed using both a 3-1/4% and a 4-5/8% interest rate. Using CRCL data, the ratio was computed at what the League considered to be more realistic rates, 5-1/8% and 6%. (The 6% rate was used because, although not currently used in any part of water resource planning, it is in the opinion of many economists the one which ought to be used in federal water projects to ensure proper and economical spending of public funds. It is, of course, more comparable to rates available from private investments, although private interest rates are currently higher still.)

The various benefit/cost ratios arrived at through this methodology were all below 1:1, except the 1.2 to 1 ratio obtained by using Corps data and figuring the discount of future benefits at 3-1/4%. Even the Corps presented a ratio of less than 1:1 when it made its report to the Senate Public Works Committee; figuring at 4-5/8%, it found the b/c ratio to be 0.99:1.

The type of data presented in the appendix to the CRCL analysis is essential to any effective opposition to a Corps proposal. A true b/c ratio cannot be computed without a thorough analysis of all possible costs and benefits. Suggestions from citizens' groups will not be considered by the Corps or elected officials unless the complete breakdown of a recomputed benefit-cost ratio is given and explained. This has been done by CRCL with the voluntary advice and aid of competent resource economists.

An important point is illustrated by this third CRCL publication. To sustain objections to a project that has reached the national level of decision-making, data presented must conform with the criteria for determining feasibility on a national scale. Under the present guidelines, the criteria used are primarily economic. CRCL's second and third publications were primarily economic analyses (the second dealing with the Ben Franklin Dam, the third with the navigation project). This is the most effective means of delaying or changing such projects after they have reached Washington, D.C. (specifically OMB) for final authorization and funding. The Columbia River Conservation League's analysis of the navigation project has been presented to the various offices of the Army Corps of Engineers, Department of Interior, the Senate and House, the State Governor, State legislature, local political units, the news media, Public Works Committees, and perhaps most importantly the Office of Management and Budget. All these decision-makers base their final decision concerning a project primarily on whether it is economically feasible, that is, whether the benefit-cost ratio is greater than one-to-one. Arguments which convincingly demonstrate a ratio of less than one-to-one will receive careful consideration, as did the CRCL reports.

CRCL's navigation project analysis was written in anticipation of a Senate Public Works Committee hearing on the proposed navigation channel and locks. It was over a year later that the hearing actually occurred. In the meantime, CRCL continued developing its arguments against the dam and channel project, and in July, 1969, published its fourth booklet describing the impact of the proposed navigation channel on anadromous fish, wildlife, and archaeological sites. CRCL stated that the channel project would be almost as destructive to the local environment as the dam, and would result in the near total destruction of the present salmon and steelhead spawning and fishing areas. An annual average of 23,000 chinook salmon and over

11,000 steelhead trout are estimated by CRCL to spawn in this area, and the numbers have been increasing sugnificantly in the last 5 years. The Corps' figures allow only for the installation of an artificial spawning channel to compensate for the loss of 6,300 adult salmon. However, CRCL claimed, there could possibly be a minimum loss of 34,000 adult fish, both salmon and steelhead. The Corps made no mitigation or replacement provisions for steelhead trout in its feasibility study and survey report.

Data for the fish losses were obtained from the Washington State Department of Fisheries and Game and from research personnel on the AEC reservation. In addition to the fish losses, wildlife losses which the Corps has failed to mitigate for were pointed out by CRCL, including intensive Canadian goose nesting and rearing habitat and island used by thousands of nesting gulls, the last such nesting area on the Columbia. Island and shore habitat used annually by over 200,000 wintering waterfowl and by hundreds of deer would be almost totally destroyed by the project.

The Corps' report gave no details as to which archaeological sites would be affected by dredging, but CRCL claimed that 66 of the 105 well-preserved sites would be destroyed or damaged. The League stated further that the Corps should develop measures to avoid damage to the sites and include this cost in the total cost of the dredging project. CRCL also stressed the fact that this might be the last chance to explore completely and evaluate the pre-history of the Columbia basin, including the oldest known human remains on the continent at the Marmes rockshelter.

According to CRCL, a conservative estimate of mitigation for the archaeological sites would be approximately $50,000 and not a single dollar had been allocated by the Corp for this cost. In all its publications, CRCL pointed out obvious and important omissions of costs in Corps analysis of the project and stressed the obligation of the Corps to include these factors. If any of the factors CRCL has cited--such as fish losses or archaeological research--were included in the Corps' study, the benefit-cost ration would immediately go below 1:1, even with the Corps' best figures.

In April, 1970, the Columbia River Conservation League momentarily turned its efforts back to the Ben-Franklin Dam issue by publishing an analysis of benefits and costs of the Ben-Franklin lock and dam project and of viable alternatives to the dam. In this report CRCL again used official Corps reports and other data the group had collected and again concluded that the project was not economically feasible. This document was intended to "upstage" the Corps by suggesting feasible alternatives before the Corps did and by supporting an alternative to the dam. CRCL felt this had an important psychological effect on the District Office of the Corps and on the local and state political levels.

CRCL contended that either a nuclear power plant or a pumped storage project could provide more power annually at a lower unit cost with less environmental destruction than the dam. Such a straightforward factual argument is difficult to overlook when presented to the Corps and Congressmen. These were not emotional pleas, but alternatives which pointed out cheaper, more efficient ways of producing power and spending public funds without destruction of unique and valuable recreational areas.

The Conservation League pointed out that the two dams below the Ben Franklin site overran their original cost estimates by an average of 24%. At this rate, when coupled with today's inflating construction costs, the projected cost of Ben Franklin would exceed the Corps' original estimate by some 55 million dollars. If this possibility were considered by the Corps or Congress, even to a small degree, the League argued, the benefit-to-cost ratio would fall further below one-to-one. CRCL also recalculated the benefit-to-cost ratios (at 4-5/8%) along the following lines:

Corps estimate-------------------------------------1.0:1.
Corps estimate plus 20% increase in construction cost--0.88:1.
Corps estimate plus steelhead loss mitigation-----0.90:1.
Corps estimate plus steelhead loss mitigation AND 20% increase in construction costs---------0.80:1.

This demonstrates clearly the economic marginality of Ben-Franklin Dam.

CRCL publications were sent to every concerned or involved elected official on the local, State, and National levels. Copies were also sent to many Corps offices on both the local and national level and to the Department of Interior, OMB, and the Public Works Committees of both the Senate and House. Every agency with input into the final decision on the project was made aware of CRCL and its analyses of, and alternatives to, Ben-Franklin Dam.

The information concerning the proposed dam and reservoir was somewhat of a sideline issue at this point. CRCL was concentrating on the navigation proposal and published the data on the dam to let proponents know that it was well prepared to take issue if the Ben-Franklin proposal came up again.

By early 1970, CRCL was having a definite effect in swaying the positions of key officials concerning the navigation proposal. The state's U.S. Senators and U.S. Representatives now declined to comment for or against and evidently were seriously reconsidering the feasibility of the project. The booklets analyzing the economics of the channel and describing its potential environmental impact received careful scrutiny in the various congressional offices, the Corps, and OMB, even though these people and agencies were cautious to admit it. At the time of the public hearing of the Senate Public Works Committee about the Upper Columbia River Navigation Plan (the channel and locks), OMB had not released its statement on the project, so the authorization procedure was stalled. The Secretary of the Army transmitted the Corps' report to OMB with a favorable recommendation and a ratio of 0.95 at the new interest rate of 5 1/8%. As far as is known, OMB has never recommended authorization of a project with a b/c ratio less than unity. The navigation project was no exception. OMB transmitted its report to the Corps and Public Works Committees in September, 1971, listing this project as economically unfavorable. They did not emphasize the environmental deficiencies, only the economic imbalance.

An unfavorable report by OMB is not the end of a project even with an unfavorable review from the Secretary of the Army. With sufficient political pressure an unfeasible project may be pushed through Congress without incorporating OMB's or the Secretary of the Army's suggestions for improving the project economically or environmentally. In the end it is Congress who will decide the outcome of a project.

In November, 1970, the Upper Columbia River Navigation Plan was excluded from the public works omnibus bill for that year. The project was not "dead" at that time, but was in a state of repose. The data CRCL supplied to OMB during its review of the project was instrumental in causing OMB to consider carefully each aspect of the project which, in turn, delayed the final decision (unfavorable) on the project until it was too late to be included in the omnibus bill.

Up to July, 1970, CRCL could only take real issue with the Corps on an economic basis, since no environmental statement had been prepared. Finally, on July 15, 1970, the Corps released its draft statement on the proposed navigation channel, several weeks after the Senate Public Works Committee's Public Hearing. The initial draft was a mere 2 1/2 pages and seriously minimized the real ecological damage while emphasizing the inflated benefits. The Washington State Department of Ecology categorically rejected the draft.

The Seattle District of the Corps submitted a revised statement to the Department of Ecology on September 16, 1970. This second draft was considerably more comprehensive, but most of the "statement" consisted of a project description. The Department of Ecology did not accept this second draft and asked CRCL to submit its comments. The Conservation League took exception to the second draft on 13 counts listing each questionable paragraph and explaining in detail how the Corps was guilty of errors or omissions. At this same time the Corps' newly established Environmental Advisory Board, headed by Charles H. Stoddard, contacted CRCL--asking for their complete evaluation of the project to compare it with that of the Corps. Before the League could reply, OMB transmitted its unfavorable report to the Army, all but killing the project for the time. However, the League submitted its testimony to Stoddard and the Advisory Board recommended to the Corps that it undertake a complete economic and environmental review of the project before any further action. The League's testimony, in part, is given below to illustrate their method of opposition and their primary arguments:

October 29, 1970

Mr. Charles H. Stoddard, Chairman
Environmental Advisory Board
U.S. Army Corps of Engineers
601 Christie Bldg.
Duluth, Minnesota 55802

Dear Mr. Stoddard:

The Columbia River Conservation League (CRCL) wishes to make the following comments on the Upper Columbia River Navigation Plan. The Office of Management and Budget (OMB) has recommended against authorization of the proposed project because it would return less than eighty five cents for each dollar invested. OMB also said that if the area redevelopment benefits are excluded, the benefit-to-cost ratio would be 0.72 to one. If the most questionable benefits, a pulp plant that has not materialized and the un-acknowledged expansion of the Alcoa aluminum plant at Wenatchee, are deleted, the benefit-to-cost ratio would be much lower. OMB suggested that the Corps present this project to the House Public Works Committee for information only. The Corps complied with this request. CRCL has recently learned from Senator John Sherman Cooper that this project will not be in the Senate's Public Works bill. For all practical purposes the navigation plan is a dead issue, but the League would like to express its views on this project with the idea that they may be helpful to you. CRCL's answers to your questions are below:

1) Under current water resource evaluation procedures there is scant justification for the proposed project. The reasons given by OMB for rejection of this project are essentially the objections raised by CRCL and others. It should be noted that the Department of Transportation questioned the validity of the claimed pulp and aluminum benefits because they "do not now and may never take place." An analysis of this project by Washington State University economics professor Cengis Yucel indicated that it would not materially improve the existing transportation system and that many of the claimed benefits were quite questionable. As might be expected, the railroads severely questioned some of the claimed benefits and the assumptions used to derive them. It is CRCL's opinion that if benefits, such as the pulp plant and aluminum plant expansion, have been questioned by reviewing Federal agencies, they should be deleted or at least investigated further to establish their validity. From communications with resource economists CRCL is led to believe that the project cost is first determined and then enough benefits are found to

conveniently make the benefit-to-cost ratio greater than unity. Sometimes this leads to the inclusion of questionable benefits, such as those mentioned above, and to absurd ones, such as the shipment of apples by barge.

CRCL's major environmental criticisms are: There was no specific plan for spoil deposition. This suggested that indiscriminate placement of this material might be expected. There were no plans to investigate or salvage the 105 well-preserved archeological sites along this stretch of the river. About two thirds of these sites would be damaged or buried under the dredging spoil. CRCL believes that these sites should be excavated and investigated by university archeologists for their scientific value and to protect them from relic hunters. The cost of archeological investigation, estimated to be about 450 thousand dollars, should be part of the project cost.

The salmon and steelhead from the Hanford reach of the Columbia River have an annual value comparable to the claimed navigation benefits. To the League's knowledge the Corps did no research to precisely determine the impact of dredging on these fish. It did not make an effort to determine the steelhead trout population of this stretch of the river. The only base information on salmon losses was developed by AEC sponsored biological research. CRCL's evaluation of fish losses was developed from private communications with AEC and game department biologists. Since no research was done on the fish losses due to dredging, there is considerable uncertainty about the extent of the anadromous fish losses. CRCL believes that these uncertainties should be resolved long before authorization is sought.

The first statement on the environmental impact of the navigation plan, required by Section 102C of the National Environmental Policy Act, was only 2 1/2 pages long. This statement exhibited a profound lack of environmental awareness and suggested that the Corps did not take the Act seriously. The rejection of the first statement by the Washington State Department of Ecology, which we include for your information, served to emphasize its inadequacy. The second statement indicated that more effort had been expended in its preparation. CRCL believes that the second statement is also deficient. The League's comments on the second statement are included for your information.

3) CRCL suggested early in 1969 that river navigation might be possible if the flow of the Columbia River below Priest Rapids Dam were regulated to a minimum flow of 75,000 cfs rather than the present minimum of 36,000 cfs required by the Federal Power Commission. This approach will be technically feasible after 1975 when the Canadian Treaty Dams are finished. The Corps has not been receptive to this suggestion because it would require a change in plans for the Columbia River hydropower system. With the poor economics of this project it is doubtful that this suggestion could make it economically viable.

Another alternative is to allow the last free-flowing stretch of the Columbia River to remain undistrubed as a scenic river or a national recreation area. This is what CRCL desires. Such an accommodation would also allow the Hanford reach of the river to contribute significantly to the Pacific salmon fishery.

5) The League's objections to the navigation project are:

a) The Corps pursued a project that cannot be justified by current water resource standards.
b) The Corps failed to perform studies necessary to precisely determine the impact of the proposed project on the fish, wildlife, esthetic considerations, and archeology on the Hanford reach of the Columbia River. This is necessary to determine all the costs that should be charged to the project and to obtain proper mitigation for fish and wildlife losses.
c) The Corps sought authorization of the project without an acceptable environmental statement.

6) The Corps has not been particularly cooperative with the League. This is probably due to the uneconomic nature of the navigation project. Correction of obvious deficiencies would have made the project even less economic. Perhaps the Corps would have been more cooperative if the project were truly economic by a wide margin.

7) The main reason for this controversy is the extent that the last fifty-seven miles of free-flowing Columbia River should be developed. CRCL believes that development of the river, as it now exists, is sufficient. Further development, in terms of navigation and dams, does not appear to be economically feasible, especially for the Hanford reach of the Columbia River. The last free-flowing stretch of the Columbia River between Bonneville Dam and the Canadian border should remain minimally disturbed so that future generations of Americans can marvel over this mighty and beautiful river. In contrast the Corps views this River almost exclusively in economic terms. To the Corps the Columbia River is a river highway and a source of hydropower that must be maximized to the last foot of head and to the detriment of fish, wildlife, archeology, esthetic, and scenic considerations.

The Columbia River Conservation League hopes that the comments above will be helpful to you. If you have further questions, please contact the League.

Sincerely,

John C. Sheppard, President

In the spring of 1971, CRCL was preparing a proposal to designate this much of the Columbia River as a National Recreational Area or have it included in the Scenic Rivers system. However, the struggle is apparently far from over. At this time, the Corps has been reviewing and updating its plans to build Ben Franklin Dam. Also, the Inland Empire Waterways Association has as its number one priority the authorization of the navigation channel.

Throughout the pre-authorization debates, the Corps was well aware of the marginal economic stature of the navigation channel. This would explain their reluctance to include any additional project costs such as steelhead mitigation or archeological salvage which would further lower the benefit-cost ratio. Although the Corps denied the fact that steelhead spawn in the project area and that there would be any archeological damage, serveral groups and agencies disagreed. It is the Corps' duty to seek and utilize the advice of other governmental agencies in their project planning. The Corps failed to do so in this case. It also failed to realize that its staff people are civil servants, appointed to serve the best interest of the public. It is hardly in the best interest of the public to spend one of their dollars and return them no more than eighty-five cents for that dollar.

The crippling blow for the navigation project came September 23, 1970, in a letter from Casper W. Weinberger, Deputy Director of OMB to Stanley R. Resor, Secretary of the Army. OMB concluded that benefit-cost ratio, with area redevelopment benefits, computed at an interest rate of 5 1/8 percent, was 0.85. Without area redevelopment benefits the ratio would be 0.71. OMB also had ". . .serious reservations regarding some of the basic assumptions that an aluminum plant at Wenatchee, Washington would undergo significant expansion by the year 2030 and that a pulp mill would be built by 1980 at Wenatchee." Neither the aluminum plant nor the pulp industry has any future plans for expansion or development in that area. Obviously OMB was correct in questioning these assumptions, as was CRCL.

In the last sentence of the letter, Weinberger states, ". . . in view of the fact that annual costs exceed the average annual benefits as reported by the study and because of the above-stated problems, authorization of the proposed project would not be in accord with the program of the President."

The "coup de grace" for either the dam or channel could come with the inclusion of the river in the Scenic Rivers systems or if it is set aside as a National Recreation Area. This would virtually eliminate any chance of a dam or channel altering the present ecosystem.

The State of Washington was undergoing a period of mild depression and high unemployment during 1970 and 1971. One short-term solution would be to bring as much federal money into the state as possible, particularly public works projects such as the channel or the dam. In view of the high unemployment rate, the decision to drop either or both of the projects on economic and environmental grounds becomes more difficult for the politicians. The basic point, however, is that there are a number of economic methods to alleviate the slight depression, but only one way of insuring a diverse and ecologically sound environment on this portion of the Columbia River--don't dam it or dredge it. CRCL intends to continue its efforts to stop the Corps and navigation and power interests from doing either.

CASE STUDY ANALYSIS

Describing the Columbia River case study at length, demonstrates how deeply involved a citizen group must get to affect civil works projects and shows that a group's plan of action must have long-range goals (establishing a National Recreational Area in this case), but remain flexible enough to change course at a moment's notice (from opposing the dam to opposing the navigation channel) without losing its effectiveness. We hope this particular case shows that a group can become involved at a late stage (Steps 9 and 10) and still have an effect, even to halt authorization.

We need to answer some specific questions about the League's action in relation to the "18 Steps" and the navigation channel:

1) During which step or steps did CRCL have the most impact and why?

2) Did CRCL and the Corps cooperate and fully exchange information as we have stressed?

3) Were CRCL's studies competent enough to be compared with the Corps studies?

4) Which approach (economic or environmental) did they use? Which would have been most effective?

1) Which step or steps did CRCL have the most impact on and why?

By the time the League got involved, the navigation proposal had progressed to Step 10. Since it got no farther, CRCL made its greatest impact during Step 10, specifically in OMB. But there are more subtle ramifications of the overall effect of CRCL, going all the way back to Step 2 (the support of concerned Congressmen).

The League's data on the economic analysis of the Corps was very likely a primary reason for OMB's rejection of the project. CRCL disputed specific alleged benefits (the pulp mill and aluminum plant) as did OMB. CRCL also lobbied, in person, in OMB to explain to both the man reviewing this project and his supervisor, the economic disparities and how the environmental omissions (fish and wildlife losses) would directly affect the benefit-cost ratio. OMB was rather "gentle" in rejecting the proposed project as they did not include any of the environmental costs that should have been included by the Corps.

The League was equally as effective on the state level (Step 9), gaining the support of the Washington State Department of Ecology, the Governor's office, and the state legislature. In the event the project had been authorized, it likely would have run into a stone wall at the state level, thanks largely to the studies of CRCL and their effectiveness in communicating their findings to the proper state agencies. The state as a whole was opposed to the project on both economic and environmental grounds.

The League was successful in getting the State's two Senators, Henry Jackson and Warren Magnuson, and the district Congresswoman, Catherine May, to essentially withdraw their previous statements of project support (Step 2). During the Senate Public Works hearings (Step 11) none of these officials supported the project, but they were "sitting on the fence" waiting for OMB's report to Congress before taking a position. This was quite an accomplishment considering the seniority and civil works influence of these three legislators.

CRCL did not have any striking effect on any of the other Steps, although they tried unceasingly to cooperate with and supply data to the District Engineer (Step 6). Even today, the District has incorporated very few of the facts or suggestions CRCL presented them. The local interests (Step 1) are still pro-channel and undoubtedly will support any future attempts to seek authorization.

2) Did CRCL and the Corps cooperate and freely exchange information as we have stressed?

The answer is clearly no! Of all the agencies the League encountered, the Corps was the least sympathetic or helpful. However, this may be somewhat justified in that the League came into being just before authorization procedures and its goal from the start was to stop the channel and preserve the river. The primary alternative that the League offered to the Corps was to do nothing--an alternative they probably disliked very much since they had spent considerable time and money on planning and were very close to seeing the navigation project a reality. The League did say a possible alternative existed if the Corps would study the impact of the new Canadian dams on the river levels and flows.

CRCL had to deal with the Corps by indirect methods--through OMB, the Corps' Environmental Advisory Board, and the state agencies. The Engineers were obviously under tremendous pressure from local groups, particularly the navigation people, to get the project authorized and therefore had to omit costs that would have lowered the benefit-cost ratio so much that even the proponents would have taken a second look. The League was careful not to waste its time on the Corps District office, and as pointed out previously, they spent their time much more effectively working indirectly in other offices.

3) Were CRCL's studies competent enough to be compared with Corps' studies?

Yes! The Washington State Department of Ecology, OMB, the American Association of Railroads, and the Army Corps of Engineers Environmental Advisory Board all used CRCL data in questioning the economics and environmental impact of the channel as the Corps presented it. Obviously, the League's arguments were better substantiated since the navigation project was halted.

4) Which approach (economic or environmental) did CRCL use? Which would have been most effective?

Which approach is most effective depends on the particular situation. In this case, the channel was marginal economically and had not been authorized. The environmental impact had also been grossly neglected, but the decision-making process had reached the federal level (OMB) so CRCL concluded the most effective way to stop the project under the present guidelines would be to dispute the very shaky economic analysis. This they did successfully. The League did not overlook the environmental arguments, and had the project been authorized, they were prepared to seek an immediate court injunction to stop the project on the grounds that it did not conform to the policies of the National Environmental Policy Act of 1969 and the Fish and Wildlife Coordination Act.

Throughout this case study we have indicated where specific actions of the League fall into the "18 Steps". Clearly, the League had more effect than in just Step 10 as we discussed in Question 1. Also, the actions the League took were not necessarily in order of the "18 Steps" but were taken as the need arose. Citizen groups must plan ahead, but at the same time be prepared for any unknowns which are bound to arise in civil works planning. It should be evident that various steps overlap each other in both time and the appropriate action necessary.

CASE STUDY

THE CROSS-FLORIDA BARGE CANAL:
SUCCESSFUL LITIGATION AT THE 11TH HOUR

If our emphasis in this book has been on the importance of beginning citizen action early, well before the authorization of a Corps of Engineers project, we must qualify our advice by adding, for those who find themselves opposing a project already authorized and perhaps even under construction, that it still may not be too late until the last load of soil is removed, or the last ton of concrete is poured, or the last floodgate is closed. The contest will be tougher and less cordial, but if citizens are convinced that a project is unjustified on environmental, economic, or legal grounds, it is worth fighting. The Cross-Florida Barge Canal was believed by its opponents to be deficient in all three areas, and its construction was halted in January, 1971, amid great controversy. The three essential ingredients in this success story are:

1) extremely thorough and effective citizen action by the Florida Defenders of the Environment;
2) successful litigation handled by the Environmental Defense Fund;
3) message from President Nixon.

The Cross-Florida Barge Canal was authorized by Congress (with only a one-vote margin, interestingly enough) in 1942. However, wartime priorities made the appropriation of construction funds impossible, despite the fact that part of the justification for the canal, according to members of Congress, lay in the belief that it would help to protect shipments of Texas oil from Nazi submarines. The money was finally appropriated in the early 1960's, after several economic re-evaluations, and work began on February 24, 1964, amid fanfare and in the presence of President Johnson.

At the time of authorization during World War II, there were no plans or specifications for the canal except for those contained in a letter from the Chief of Engineers and recorded as House of Representatives Document #109, June 15, 1942, which said in part that the canal would cause "no damage to lands as the ground-water conditions along the route of the waterway would be unchanged." Many years later, that statement was to return to haunt the Corps as lawyers for the Environmental Defense Fund argued successfully that documented damage to the area ground water supply constituted a violation of the 1942 authorization.

The route selected for the canal was one of several studied by the Corps. Often referred to as Route 13-B, the canal path followed the Withlacoochee River for a short distance from Yankeetown on the Gulf Coast, continued for a long stretch along the Oklawaha River (changing it from a meandering wilderness waterway to a straightened, shallow canal with locks and impoundments) and joined the St. Johns River in eastern Florida, following it to Palatka and on to the Atlantic Coast.

The long delay between authorization and construction occurred mainly because the project was not found to be economically feasible until 1958, when the cost/benefit ratio (computed with an interest rate of 2 5/8%) was purported to be 1.05 to 1.0. The American Association of Railroads challenged the canal's navigation benefits, and the Corps' next evaluation (issued in 1962 and partially based on a study which they hired Arthur B. Little, Inc. to do) showed reduced navigational benefits. However, the reduction in navigation benefits (which would have made the project infeasible) was now offset by the inclusion, for the first time, of flood control and land enhancement benefits. The interest rate used in the new study was again 2 5/8%, and this time the benefit/cost ratio came out at 1.17 to 1.

In 1963, the Departments of Interior and Agriculture released an inventory of American rivers recommending the Oklawaha for preservation as a wild and scenic river:

> This river is of sufficient size and unique character and should be included in any system of wild rivers. It is felt that this outweighs any other possible functions that have been proposed for the general area.

The Corps, however, went ahead and began construction of the canal in 1964. By early 1966, the public had seen the first locks, reservoirs, and routing of the Oklawaha River become a reality. Detrimental effects upon the environment were visible. Governor Burns held a public meeting to discuss the canal. Attendance was high and the arguments were many and varied. Among the impacts noted and feared by conservationists were:

- Rapid growth of aquatic weeds (notably the water hyacinth) in the Rodman Reservoir. Eventually, it was predicted the weeds would reduce desirable fish populations and make the claimed recreational benefits impossible to achieve. Indeed, by 1970, the following sign appeared at the Rodman Reservoir:

> CAUTION!
>
> FLOATING DEBRIS AND UNDERWATER
> OBSTRUCTIONS - OPERATE BOAT AT
> SAFE, SLOW SPEED - NO WATER
> SKIING PERMITTED IN RESERVOIR

- Wildlife losses. Desirable species of fish were expected to thrive for a few years, until the water hyacinths, submerged weeds, or algae in the shallow, slack-water reservoirs choked them out of existence.
- Loss of the Oklawaha River and its unique valley as a wild river system of great beauty.
- Pollution of the aquifer due to porosity and leakage in the canal.

EFFECTIVE CITIZEN ACTION:
FLORIDA DEFENDERS OF THE ENVIRONMENT, INC.

Apparently, the opposition of conservationists was never seriously considered by members of Congress (especially not by the Florida delegation, which supported the canal to a man). In 1969, the opponents to the canal decided to reorganize. It was at this point that the fortunes of the environmentalists began to change from bad to good - not by an act of magic, but by lots of hard work, organization, widespread participation, and undying persistence.

The Florida Defenders of the Environment was formed in July, 1969. William M. Partington, Assistant Director of the Florida Audubon Society, took a leave of absence from that organization to serve as president of the Florida Defenders of the Environment. Arthur Godfrey later agreed to serve as Honorary Chairman of the group.

The most valuable and extensive work of the Florida Defenders of the Environment was the publication of a detailed, 115 page book entitled Environmental Impact of the Cross-Florida Barge Canal with Special Emphasis on the Oklawaha Regional Ecosystem. Completed in March, 1970, the book takes a scholarly look at the regional environment in several specific studies contributed by geologists, ecologists, biologists, and hydrologists. From the beginning, the FDE has had a close working relationship with specialists on the faculties of the various colleges, universities, and research institutions in the state. This has enabled them to speak with authority on the environmental impact of the canal. After examining the local environmental features, the book goes on to summarize the history of the Barge Canal and then to discuss the environmental impact the canal has, and is expected to have, on the Oklawaha Regional Ecosystem. Then Secretary of the Interior Walter J. Hickel issued a report on the Barge Canal later in 1970, and in it he referred frequently to the FDE report and recommended a 15-month moratorium on construction to allow for further study. Indeed, the FDE study has value which transcends the Barge Canal controversy; it might serve as a valuable model for groups studying other Corps projects. Copies may be obtained from the Florida Defenders of the Environment, Box 12063, Gainesville, Florida, 32601. A contribution to the organization will help to defray the publication and distribution costs.

FDE wisely inserted a "Summary of Findings" and "Recommendations" at the very beginning of the book. They are as follows:

SUMMARY OF FINDINGS

The Cross-Florida Barge Canal now being constructed by the United States Army Corps of Engineers has been studied from the viewpoints of geology, hydrology, ecology, economics, land-use planning, anthropology, and environmental quality. The results of these studies are presented in this report. The following is a summary of the principal findings and resulting recommendations.

GEOLOGY:

1. The presence of solution holes and fracture zones near project structures makes it likely that there will be problems of porosity and leakage, and that pollution of and hydrologic changes in the aquifer will occur.
2. The location of the canal locks and the dams on or very near the Oklawaha River fracture zones introduces the risk of earthquake damage to these facilities. The history of Florida earthquakes is not reassuring in this respect.
3. Mineral resources in the vicinity of the barge canal are meager, being mostly bulk materials for local use. Therefore, it is unlikely that construction of the canal would result in greater utilization of these resources.

HYDROLOGY:

1. Water supplies in drought periods may be inadequate for canal operation without extensive additional pumping facilities.
2. Because the summit pool connects freely with the ground water of the Floridan Aquifer any pollution of the pool will enter the aquifer and flow to natural discharge points.
3. Some pollution of the summit pool and the Floridan Aquifer is inevitable because of nearby residential or industrial development, leakage from barges, and turbidity resulting from construction.
4. Major pollution from accidental spills of oil, herbicides or toxic materials is predictable in the long run of barge operation. These pollutants in the Aquifer may damage water supplies of communities nearby and impair the unique recreational qualities of Silver Springs and of whatever sports fishing the canal impoundments might afford.

5. Oklawaha River water which will be back-pumped to the summit pool may accelerate solution of limestone in the summit reach because of its different chemical characteristics.

6. Excessive and possibly uncontrollable leakage of water from the summit pool to the lower pools is a distinct possibility.

7. There is little doubt that the canal would produce an overall decline in the quality of surface water in the system.

8. Flood control benefits claimed for the canal project appear highly dubious.

ECOLOGY:

1. Most of the Oklawaha regional ecosystem (see Figure 1) is still unimpaired, and it is the only large wild area remaining that supports the full spectrum of plant and animal life native to north-central Florida. Destruction of this unique natural region by the proposed canal is unjustified and hopelessly uneconomic in terms of long-run social needs.

2. Experience in Florida has proved conclusively that shallow bodies of impounded water (such as the Rodman and Eureka Pools) trap nutrients and hence are subject to rapid over-enrichment and invasion by masses of water weeds which are difficult and costly to control. Crushing forests into the bottom, as was done in the Rodman Pool, merely speeds and compounds enrichment processes. These processes will quickly reduce, and ultimately destroy, most recreational and fisheries values of the impoundments.

LAND-USE PLANNING:

1. Controversy about the proposed barge canal emphasizes the need for long range regional land-use planning. No such planning has yet been done in this region and no agency now exists to do it. To introduce major environmental changes (such as the barge canal) in the absence of an overall land-use plan is utter folly.

ECONOMICS:

1. The discount rate used in calculating the cost-benefit ratio of the canal is unrealistic. If realistic interest rates were applied, the supposed benefits of the canal would no longer exceed the cost.

2. In calculating the benefits of the canal, both the amount of traffic which it was assumed that the canal would carry and the freight savings per ton mile appear to be unjustifiably inflated.

3. Little evidence exists to support the view that the canal will actually bring the enhancement of land values shown as one of its benefits.

4. Results in completed sections of the project suggest impairment rather than enhancement of potential recreational values in the region affected by construction of the canal. There is little evidence to support Corps of Engineers figures on recreational benefits claimed for the proposed canal.

5. If the canal did compete effectively with other forms of transportation, the resulting losses incurred by these transport agencies would necessarily be passed on to the public in higher rates. These represent an additional cost of the canal not considered in computing the cost-benefit ratio.

6. Successful operation of the canal depends to a considerable degree upon the completion of the Intracoastal Waterway from St. Marks southward along the northwest coast of Florida. The need for, and cost of, this "missing link" waterway is not considered in calculating the costs of the proposed canal.

7. In view of these and other facts reported in the economic section of this report, we believe that in spite of the amount already invested, an impartial economic restudy of the project would result in its rejection as unsound, on a purely economic basis, without any consideration of the environmental values to be lost.

EXISTING CONDITIONS:

1. The sections of the canal system already completed have seriously disrupted portions of the natural ecosystems of the lower Oklawaha River and the Withlacoochee River. The river courses and flow have been modified. Natural forests in the flood plains and vicinity have been destroyed over extensive areas. A debris-choked reservoir, heavily invaded by exotic water weeds, has been created in the Rodman Pool area of the Oklawaha system in particular. Fisheries values have been impaired. The wild quality of the environment in these areas has been drastically reduced. Nevertheless, much of the Oklawaha River and its valley still remain unimpaired.

2. With cessation of further construction and expenditure of funds to remove downed timber and other debris from the areas affected, and with proper pollution control measures in the watershed, it is expected that with time even in the damaged areas the natural environments would recover, the wild quality of the area could be regained, and the ability of the region to supply high quality outdoor recreation would be restored.

OPERATION OF THE CANAL:

The three locks already built are of a size being criticized as antiquated in other barge canals which the Cross-Florida Barge Canal is supposed to complement. To replace these locks with larger units in order to accommodate large, unbroken tows of barges would probably prove uneconomic. This barge canal will be too shallow for the newer trans-Gulf barges and for super-vessels carrying numbers of smaller barges.

RECOMMENDATIONS

1. We recommend that further expenditure of Federal funds for the construction of the Cross Florida Barge Canal be halted and that no further state funds be expended toward completion of the canal.

2. We recommend that the authorization extended by Congress in 1942 for the construction of the Cross-Florida Barge Canal be rescinded.

3. We recommend that the lands along the canal right-of-way in the vicinity of the Oklawaha River to which the Federal government or the state of Florida now hold title be deeded or leased to the United States Forest Service or other appropriate agency for recreation and other appropriate multiple-use management. We further recommend that a portion of the area suited to such purpose be designated a Scenic River and be included in any wild and scenic rivers system.

4. We recommend that the Rodman reservoir be drained immediately, and that Oklawaha River be returned to its natural free-flowing condition from Silver River to the St. Johns River.

5. We recommend that the hydric hammock and adjacent forest communities destroyed and flooded when the Rodman Pool was created be carefully tended back to their original composition, organization, and zonation. This restoration will proceed rapidly in the Florida climate and will be well advanced in ten to twenty years.

6. We recommend that a regional environmental planning council, established in accordance with existing Florida statutes, consider the needs of conservation, environmental protection, recreation, and development throughout the Oklawaha Regional Ecosystem.

7. In accordance with plans to be developed by the planning council, we recommend that the Corps be authorized to construct in the completed western portion of the project those features required to make the existing canal and other water bodies more useful to the residents of the region and of the nation.

8. We further recommend that in future projects, benefit-cost analyses be conducted by an impartial agency not involved with project construction, and that full consideration be given to ecology and environmental values in the planning and evaluation of such projects..

9. To avoid difficulties in future projects, we recommend that all authorized public works be started within five years of their time of authorization, and if not completed within ten years of their original authorization date, that a full restudy be accomplished. Failure to comply with these conditions should result in withdrawal of project authorization.

10. We recommend that official public hearings be held in a location conveniently close to any proposed public works project within a year previous to authorization and within a year previous to initial funding in order to evaluate all evidence and to decide whether initiation or continuation are in the public interest. This is necessary in view of the rapid environmental, economic, and social changes currently being experienced in the United States.

Other activities undertaken by the Florida Defenders of the Environment include:

* Sending a letter to President Nixon signed by over 150 scientists asking for a moratorium on construction of the canal.

* Serving as a clearinghouse for information on the Barge Canal for the benefit of students, concerned citizens, the press, federal agencies, political candidates, state legislators, national conservation groups, Congress, and the White House.

* Encouraging a land-use study for the Oklawaha region as an alternative to the Canal, using professional planners in its preparation.

* Making public appearances on TV, radio, and before citizen groups to explain the controversy and present both sides.

* Conducting candidate's poll on conservation issues and the Barge Canal.

Most of these down-to-earth chores have been performed by volunteers, but of course there have been costs associated with them. FDE has sought funds through the memberships of several local and national conservation organizations, while working to keep its expenses at the minimum required to do an effective job of fighting the Barge Canal.

LITIGATION BY THE ENVIRONMENTAL DEFENSE FUND, INC.

The Florida Defenders of the Environment also provided valuable scientific backup for the suit filed by the Environmental Defense Fund, Inc. (EDF) against the Corps aimed at obtaining a permanent injunction to stop construction on the Barge Canal. FDE is also named as one of the plaintiffs in the suit.

In its brief, the Environmental Defense Fund argued:

> It is the basis of Plaintiffs' case that Defendants' activities must be lawful and authorized not only by the Act of July 23, 1942, but by the entire fabric of law by which Congress has circumscribed and directed the activities of Defendants with regard to environmental matters. Any other conclusion would immunize from the mandates of Congress those agencies and officials who have the greatest potential for preserving, or destroying, the environment.

EDF described the status of the Barge Canal construction in 1970, and asked for a preliminary injunction halting further work until the Corps complied with all relevant laws:

> Construction did not commence until 1964. Since that time, Defendants have constructed both Eureka and Rodman dams (though Eureka Dam has not yet been closed), filled Rodman Reservoir, and completed St. Johns lock below Rodman Reservoir and Eureka Lock at the Eureka dam site. In terms of physical length, about one-sixth of the canal has thus been completed. More than fifty miles of the canal route, including part of the Oklawaha River, are still substantially undistrubed. Consequently, about one-fourth of the total project, including locks and dams, has been completed.

In requesting a maintenance of the status quo, EDF claimed that the Corps was in violation of the following laws:

- The National Environmental Policy Act of 1969, 83 Stat. 852, particularly Section 102, requiring an environmental impact statement. Plaintiffs argued that the clearing and filling of the Eureka Reservoir site was a "major Federal action significantly affecting the environment," and therefore could not lawfully be carried out until a 102 statement was prepared and approved.

- The Fish and Wildlife Coordination Act, 16 U.S.C. 661-665, requiring consultation with State and Federal wildlife agencies and a minimization of damage to fish and wildlife resources.

- The canal authorization, Act of July 23, 1942, 56 Stat. 703, which, EDF claimed, authorized only "construction of the Cross-Florida Barge Canal in a manner which does not affect the ground water supply of the area."

On January 15, 1971, Justice Department lawyers argued for the Corps in support of its motion to dismiss EDF's case before Judge Barrington Parker in U. S. District Court, Washington D. C. Its claim of soveriegn immunity and lack of standing for the environmentalists were not accepted by Judge Parker, who then went on to grant the preliminary injunction requested by the plaintiffs. Indeed, it appeared to observers in the courtroom that day that the Corps of Engineers had been so confident of success in its motion for dismissal that it was sadly unprepared to rebut the case presented by the Environmental Defense Fund. In its opinion, the Court said, "The inexorable conclusion is that there is a strong probability that further construction and related operations as now planned might irreparably damage marine and plant life and a primary source of drinking water for the State of Florida. For this there would be no adequate remedy at law."

INTERVENTION BY PRESIDENT NIXON

The Cross-Florida Barge Canal was brought to a halt just four days after the granting of the preliminary injunction. President Nixon, weighing the widespread opposition to the canal and the impact of the preliminary injunction against the dwindling justification for continued construction, called for a stop to all work on the canal.

Proponents of the canal have been dismayed by the termination of work on the Cross-Florida Barge Canal and have urged the President to reconsider. The Florida Canal Authority, in particular, has disputed Nixon's right to stop by executive action a project which has been authorized and funded by Congress. The Canal Authority has filed suit against the Secretary of the Army and the Jacksonville District Engineer, Colonel Avery S. Fullerton. Recognizing that even if Nixon stands firm, subsequent Presidents may rescind his order, the Environmental Defense Fund is continuing to press for a permanent injunction. The legal wrangling involved in both the EDF suit and the Canal Authority's countersuit may delay the final outcome of the Barge Canal controversy for some time, but as of now the project is at a standstill.

The case of the Cross-Florida Barge Canal is, indeed, an example of what the combined forces of citizen action, legal action, and political action can accomplish--even at the eleventh hour.

CASE STUDY DISCUSSION

The Columbia River Conservation League and the Upper Columbia River Navigation Plan have not come into the national spotlight as a crucial environmental issue, as have the Cross-Florida Barge Canal controversy and to a lesser degree the Allerton Park issue in Illinois (discussed in detail in Chapter 3). This may have been the result of a combination of factors: 1) the project has not been authorized by Congress; 2) the League chose to pursue a behind-the-scenes political-scientific approach; and 3) the single, local newspaper was avidly pro-channel and for the most part ignored the League's efforts. In the two other case studies mentioned above, one had been authorized (Oakley Dam) and construction had begun on the other (Cross-Florida barge canal). Rightfully so, the public became very outspoken, attracted comprehensive press coverage, and at the same time developed factual economic and ecological arguments against each of the two projects. They have been successful in attaining their goals: 1) to stop further construction of the barge canal, and 2) to seek an injunction to stop any construction of Oakley Dam as the Corps has proposed it. However, the "success" of the three groups involved with these projects might be measured in varying degrees. The least successful, ecologically, would be the attempts to stop the Florida barge canal. The canal has already been one-fourth completed and has resulted in significant economic losses and environmental damage. Further construction was stopped by the President. Oakley Dam has been authorized for construction, and the Corps has spent considerable time and money on the design of the project and various alternatives. The Committee on Allerton Park has filed suit to stop the entire project before construction. The Upper Columbia River Navigation Plan was halted before authorization, and attempts are now being made to include the river in the Scenic Rivers system or to have it designated a National Recreational Area. To date, each environmental group has accomplished what it set out to do. Now the question is: What is the basic goal of all environmentalists? It should be to take action in such a way so as to insure all future planning fully considers the economic, social, and ecological impact of each project, and of all projects as a whole (summation effect). The goal will be to prevent the authorization of projects that can be shown to be economically, socially, or ecologically unjustified. This, in no way, oversights Florida Defenders of the Environment and the Committee on Allerton Park. In fact, legal actions at the last moment may actually be more effective in making the Corps and their proponents take a serious look at the present criteria for evaluating water resource projects. Further construction of the barge canal has been stopped, and if the Allerton Park suit is successful, Oakley Dam will not be built. However, as mentioned before, the Upper Columbia River Navigation Plan is still the number one priority of the navigation interests, despite its being temporarily "killed" by OMB. Perhaps the best way environmental groups can measure their success is to try and obtain the best solution that is possible, or more bluntly, get all you can, while you can. In this respect, all three of the above groups have been equally successful.

CHAPTER III

THE HARD CORPS AND OUR SOFT ENVIRONMENT

The Army Corps of Engineers possesses the capability of altering our environment in many ways, but the many conflicts which have arisen between the Corps and environmentally-concerned citizens have centered largely around the Corps' plans for public works projects. Citizen opposition or support has generally been expressed most strongly by the people who live in the immediate area of a proposed corps project. In recent months, however, growing national awareness of environmental problems has given rise to a more widespread interest in Army Corps projects. Nationally-based conservation organizations, including the Environmental Defense Fund, the Sierra Club, and Friends of the Earth, have challenged the Corps in its project planning in an attempt to minimize environmental damage.

Just what does the Corps do to our environment? Most commonly it builds dams designed to hold back flood waters and to provide electricity, navigation, usable water, and recreational facilities. The Army Engineers also build and improve navigable waterways, by carving canals out of the countryside or by widening, deepening, and straightening existing streams, rivers, and lake channels. Urban flood control projects are frequently constructed by building levees and channels. And what is the environmental impact of these activities? Let's look at some facts and examples. We must make clear that these events do not occur in every reservoir, but have been known to be results of impounding water, channelizing, and lining and straightening streams.

Dams and Reservoirs

The building of a dam is a complicated task. The impact of a dam and reservoir upon a particular habitat is also complicated, and in many cases the effect is drastic. Each dam creates a different set of after-effects, but we shall look at a variety of possible effects depending on the habitat in which the dam is constructed. From an ecological standpoint, reservoirs can be grossly divided into warm water impoundments and cold water impoundments. We will not attempt to describe the ecosystem differences of each, but citizens should be aware of the fact that there are some basic ecological differences between civil works projects on cold streams and on warmer streams. Cold water impoundments are relatively infertile, biologically. Reservoirs with warm waters will usually support a much greater biomass and correspondingly have a greater rate of biological productivity than cold water reservoirs. However, the impounding of water, whether warm or cold, usually increases the rate of organic and inorganic deposition, therefore limiting the geologic life of the body of water.

The Corps' first task in preparing to build a dam is to purchase the land to be used for the dam and its approaches, the reservoir behind it, and some additional acreage immediately below it for the floodway. The condemned land may have been valuable farmland (as with Tuttle Creek Dam in Kansas), or a unique river valley or canyon. Before flooding, the reservoir land is usually cleared of all buildings and foliage. Sometimes the trees are harvested for lumber purposes, or cut and burned on the spot. Sometimes they are crushed with a giant masher and left to sit at the bottom of the reservoir.

Occasionally they are left standing (Milford Reservoir, Kansas). When the latter two courses are followed, the wet, decaying trees at the bottom of the reservoir can release a certain amount of nutrients into the water and resultant plant growth may eventually clog the surface and cause navigational, recreational and health problems, as well as hastening the eutrophication ("enrichment" of the basin) process.

During eutrophication, nutrients in the water cause a rapid growth of simple plants, such as the toxic blue-green algae and noxious filamentous species. During periodic dieoffs these plants consume oxygen at a rapid rate, causing a drop in the oxygen level of the water **and** a replacement of some of the usual forms of life with the fungi, bacteria, and sludge worms which survive best in anaerobic (no oxygen) environments.

There are reservoirs in which trees have purposely been left as part of the lakes' fish and wildlife management program. Tree stumps, snag piles, brush piles and standing trees provide shelter for some species of game fish such as bass and crappie. Flooded woods have also been used by geese and ducks for resting and wintering areas.

In some cases, reservoirs can also serve to improve water quality significantly. Under reservoir conditions bacteria are adsorbed by suspended particles and removed from the water by sedimentation. A bacteriological sample stored for a long period will decrease quite rapidly. A five-day reservoir storage period may result in as much as a 90 per cent coliform reduction between the influent water and the effluent water. The coliform group of bacteria serve as an index to the presence of human fecal material in the water.

Following construction and closure of the floodgates, the reservoir rises slowly and steadily. The height of the "conservation pool" (the normal height of the reservoir) is determined during project planning, but the reservoir actually fluctuates throughout the year. In the spring, the combined effects of thawing snow and frequent rains may cause the reservoir to rise, often exceeding the conservation pool level and spilling over to the "flood pool." The duration of reservoir flooding varies from one year to the next; when it is lengthy, it can cause a permanent change in the habitat it covers. During the summer months, drawdowns of a reservoir often occur to augment the decreased downstream flow to help prevent potentially hazardous growths of bacteria and algae. The reservoir recedes visibly, sometimes to the point of leaving boat docks and swimming areas high and--well, if not exactly dry, then muddy. The mudflats are usually unsightly, sometimes foul-smelling and seriously impair the recreational use of the reservoir.

The effects of a fluctuating water level (drawdown) are more sigmificant ecologically than aesthetically, however. The lowering of the water level with the accompanying decrease in water volume and surface area affects all parts of an aquatic habitat and all components of the plant and animal communities that inhabit the water. If the lake bottom is allowed to dry up during a drawdown period, an abundance of oxygen becomes available in the bottom soil, the process of decomposition is speeded up and greater quantities of potassium and phosphate are released in the soil. The dry bottom is very fertile and may develop a growth of terrestial plants. Prolonged winter and early spring drawdowns will insure a luxuriant growth while late summer and fall drawdowns allow little time for plants to establish.

Rooted aquatic plants may fluorish under drawdown conditions; lowering the water level is not, in most cases, an effective method of controlling rooted aquatics. Raising the level, may, on the other hand, control the spread of certain aquatic plants.

Drawdown concentrates motile invertebrates and small fishes, and exposes them to new environmental conditions, especially increased predation. Predation and the stranding of fish in the littoral (near the shore) zone as the water recedes may significantly reduce the populations of smaller fish without reducing the numbers of predatory species, such as bass. This results in a selective culling which is more specific for, say sunfish, than for bass. The bass, in turn, may have a higher survival rate the following year and become overpopulated and stunted. On the other hand, the sport fishery may be increased markedly, if the bass are harvested.

Drawdown can have a significant impact on the management of fish and wildlife and recreation. Winter drawdowns have been shown to limit the abundance of rough fish (by limiting their food supply) without serious injury to game fish populations thus maintain fish species considered more desirable by fishermen. Flat areas on a reservoir bottom are ideal for making seine hauls, if cleared of stumps and debris. During low water conditions seines may be used to harvest concentrations of carp, buffalo or other rough fish for commercial purposes or to improve the population of game fish. Reservoirs with the greatest water-area fluctuations contain the largest percentage (by weight) of predatory species, which includes many of our game species. However, the man-made cycles of water levels in these lakes are not closely related to the natural cycles of rainfall and runoff, and it may take years for the fish population to adjust to the new cycles.

Drawdown only occurs in man-made impoundments. However, natural lakes are subject to annual fluctuations also, although these variations are generally more predictable and less harmful ecologically than the drawdowns imposed by man. If the dam is necessary, then the management of the pool level should include full consideration for fish and wildlife and be managed to maximize the benefits from these two resources. One fact is abundantly clear--the Corps must cooperate more fully with fish and wildlife interests than it has in the past and provide research money to study the effects of various types of drawdown on reservoir ecosystems. The knowledge of reservoir management is minuscule, relative to what we need to know to manage man-made lakes properly. In addition to efficient management of individual reservoirs, there is a critical need to improve the management of entire river basins containing a number of man-made lakes. River flows and drawdowns must be coordinated over the entire basin if the proper management of recreational and environmental resources is to be a reality. New techniques of systems analysis and computer programming should be developed to implement this coordination. This does not imply seriously curtailing the demands of the power, navigation and agricultural interests, but only asks that the Corps and various river basin commissions give equal consideration to the aesthetic and environmental resources on our waterways.

In an undammed stream, the water flowing downstream carries with it a certain amount of soil and nutrients which contributes to the fertility of the land it covers during natural flooding. Indeed, the high fertility quotient of the Mississippi Delta and the Nile Valley in Egypt are well known, and are directly attributable to the spring floods of these rivers. A dam, however, is a barrier to downstream flow. When the water is delayed in the reservoir, the silt and organic matter in the water settles out. The build-up of silt and detritus in a reservoir can be rapid, and it may decrease the depth of the reservoir and cause a reduction in the species diversity of fish, with a corresponding increase in the rate of eutrophication. At the same time, the farmland downstream receives decreasing amounts of soil nutrients and therefore suffers a loss in natural fertility. The farmers must make up for the loss in fertility by increasing their use of organic and inorganic fertilizers. During heavy rains these fertilizers are washed into the river--causing new and more diffuse water pollution problems.

Although the natural flooding of downstream lands is impeded by a dam, a "controlled" flood sometimes occurs. When spring runoff and rains cause the reservoir to fill to capacity, the Corps sometimes allows a greater flow through the floodgates, causing flooding downstream. The result may be flood damage on the very land the dam was built to protect. In Illinois, farmers along the banks of the Kaskaskia River below the Carlyle Dam have filed claims against the Corps for damages to their crops after excessive flooding four years in a row. The Carlyle situation is exceptional however, in that the Corps made a serious error in estimating the downstream channel capacity. The Corps predicted a capacity of 9000 cubic feet per second (cfs) while the actual capacity was only 4000 cfs.

Even when the downstream land is not agricultural, the change in flood patterns invariably alters the ecosystem of the area. In developed areas, the changes may cause structural damage. Sometimes the construction of a flood control dam encourages development of the flood plain, so that when the area does flood, dollar damages are higher than before the dam was built!

The construction of a dam also affects the local microclimate, although the change is usually insignificant and difficult to measure. The reservoir may cause a greater frequency of fog, higher humidity, and increased rainfall, depending on the general climate of the area concerned. The winter air temperatures in the immediate reservoir area are likely to be slightly ameliorated.

In shallow reservoirs, the temperature of the water rises as the still water absorbs the sun's heat during the summer months. This rise in temperature may have a profound effect on the fish population of the reservoir. While many species cannot survive, the carp, which is tolerant of low dissolved oxygen content and relatively warm water, has in some cases become the dominant species. As the number of species is reduced, the reservoir ecosystem becomes more simplified, less stable, and increasingly eutrophic.

A warm water reservoir may have the potential to become an important commercial fishery. Increasing numbers of midwest and southern lakes and ponds are being managed for the express purpose of producing the greatest poundage of fish-per-acre possible to market commercially. These fish species include carp and catfish. However, there is little justification for developing an entire civil works reservoir for such a single-use objective. A commercial fishery could be better justified as a portion of the benefits of a man-made lake. A possible exception in the multi-purpose requirement of civil works projects may be found in the Anadramous Fish Act (Public Law 89-304) as amended by Public Law 91-249, May 14, 1971. The law allows the construction of a reservoir for the sole purpose of regulating river flows for anadramous fish species (species which mature in saltwater and which are born and spawn in freshwater). Such reservoirs might significantly improve the salmon and steelhead runs in such rivers as the Umatilla in Oregon and the Yakima and Walla Walla in Washington as well as improving water quality and recreation. These projects would require cost-sharing by local interests and coordination with the Bureau of Reclamation and Soil Conservation Service to insure that the additional water supply is used only for the fish and not for irrigation or other purposes.

A dam may act as a formidable barrier to fish in their annual migrations. In some instances the Corps has provided the fish with a route to their spawning grounds by building fish ladders. During construction at the Lower Monumental Dam in Washington State the fish were very ineffectively netted and transported around the dam by truck! The problems of fish passage are most acute on the west coast where dams have significantly decreased the populations of anadromous fish (salmon and steelhead) with a resulting decrease in the economy of the sport and commercial fisheries. Fish passage is not a one-way problem. Equally important to allowing adult salmonids and other migratory species upstream, is to allow their progeny to migrate downstream. Approximately one to three per cent of the eggs deposited by anadromous species at the spawning grounds actually survive to return and spawn in two to four years. Under natural conditions only about ten per cent of those hatched successfully reach the ocean, with the rest being lost to predation during their downstream migration in freshwater. When the effects of predation in the reservoir and the tailrace below the dam are combined with the mortality in passing through the turbines and floodgates of a dam, the odds against fingerling survival increase. The Corps is actively pursuing solutions to these mechanical problems, but with more careful planning the solution could have been determined before authorization of these dams, not after construction.

A serious problem that has existed for years, but that has only recently come under careful study, is that of nitrogen gas supersaturation in the Columbia and Snake River impoundments. The problem is most acute during the spring runoff period when water must be released over the spillways of the numerous dams. As the cold water cascades down the spillways, it mixes with air which becomes "entrained" or attached to droplets and particles of water. If the tailrace section below the spillway is sufficiently deep, water with the entrained air will plunge to the bottom and will be exposed to the pressures of water at that particular depth. This increase in pressure forces oxygen and nitrogen into solution with the water, often to levels of 140 per cent of saturation. (Levels over 120 per cent of nitrogen are lethal to salmon and steelhead.) These two gases are picked up by salmon and steelhead via their gills. If the fish remain at the deeper depths (over 20 feet), there are few problems. However, as the fish approach the fish ladders at these dams, they must surface. As they surface, the water pressure decreases and the nitrogen, which is not used up in metabolic processes, comes to the surface of the fish as it (the nitrogen) moves toward an equilibrium. The outward appearance is a fish covered with small silver bubbles of N_2. These bubbles occur on the skin and gills and around the eyes. The eyes of fingerling salmon and steelhead have actually popped out because of the higher concentration of nitrogen in the blood of the fish. In 1968 and 1969 the dieoffs of upstream migrants--as a result of nitrigen supersaturation--were sometimes estimated to exceed 50 per cent of a particular run of fish.

Severe mortality has also been observed in the downstream migrating fingerlings. The problem is compounded by the fact that there are virtually no unimpounded sections on these rivers in the Pacific Northwest. Water flows over the spillways right into another reservoir with minimal aeration below the tailrace. The Corps has suffered badly in the public relations department as a result of the nitrogen mortalities. It is currently studying the problem, but again we cannot help but observe that if anyone had had the foresight to predict the effect of changing pressures on the O_2 and N_2 distribution, a solution could have been found before authorization. Whether or not the "gas bubble disease" is eliminated in time to preserve the Columbia and Snake River fishery remains to be seen. The problem of N_2 supersaturation may not be limited to the Northwest, but in theory could occur wherever there are large, cold water streams and high dams.

A dam is also a barrier to migrating land animals that have used the river flood plain for centuries. A large reservoir such as Dworshak Dam in Idaho may deprive local wildlife of the wintering areas and migration routes they need to maintain the present population. Men and boats also meet the barrier; if the river was once a favorite whitewater canoeing area in its natural state, that sport is lost forever where the river is flooded. Canoeing and kayaking are increasingly popular sports, and citizens participating in them should make every effort to get the Corps to include mitigation for these lost recreation areas as a project cost.

Perhaps it is the irrevocability of dams which makes them so worthy of careful forethought. Dams and reservoirs, like the living things nearby, have life expectancies or spans of useful existence. But what happens when that lifespan expires? Indeed, the reservoir can be drained and concrete dam broken up (this is very unlikely), but the river will probably never return to its original preimpoundment condition.

To our knowledge, the Corps has done very little research on what they will do with those reservoirs that are rapidly filling with silt except to build bigger dams. They haven't planned ahead of the 50 or 100 year useful life span of some of these lakes. This is a serious problem with very significant economic and environmental implications. One question is: what does one do with a dam that no longer serves its purpose, or a reservoir that has filled in and is nothing more than a flooded marsh? If there were floods before the dam, the potential flood danger with silted-in reservoirs is much more severe. It will be very difficult to relocate a dam as most of the sites have already been taken. What long-range effect will a system of dams have on downstream geologic deposition and soil fertility? Will the concentration of nutrients and pollutants in a reservoir affect the local water table, water supply or soil fertility?

These are critical questions that can be answered by studying the existing projects in hopes that more realistic estimates of the true economic, ecologic, and sociologic impact of future dams can be obtained _if_, in fact we need any more dams at all. Planners must weigh more carefully the environmental benefits against the environmental costs of a proposed dam, and try to make an intelligent judgment as to whether the environmental benefit/cost ratio is really a positive one. The ecological equilibrium is sensitive, and a mishandling of the parameters involved in dam construction can only increase the present imbalance of nature, our economy, and our society.

Navigation Projects

While the gross environmental impact of a dam evolves over a period of years, the effects of a dredging operation come about almost immediately. When the Corps deepens a channel or builds a canal, the spoil taken from the bottom must be put somewhere. Often, in a large lake, spoil is dumped indiscriminately back into the water away from the channel, resulting in the complete destruction of the habitat involved. If, on the other hand, the spoil were dumped on land, it may cause the destruction of valuable marshes, swamps, archeological sites or other riparian habitat where unique plant and animal communities abound and where many forms of aquatic life spend a part of their life cycle.

The positive and negative ecological effects of a dam are generally measurable and relatively easy to differentiate. The ecologic impact of navigation projects, particularly channelization, can be categorized almost entirely as negative. Positive environmental effects are quite rare. By their very nature, most navigation projects are ecologically destructive. They involve primarily digging, dumping, straightening, and lining. None of these operations lends itself to environmental conservation, preservation or enhancement. If and when the new Water Resources Council guidelines for land and water resources planning are adopted, navigation projects may become more difficult to implement, in view of the multiobjective approach of the guidelines.

In certain cases, the Corps will claim environmental "enhancement" from some navigation projects. Cape Cod Canal has allowed the rock bass to expand its range considerably thus making it more readily available to sport fishermen. The harbor improvements in Tampa Bay were made in such a way as to increase the circulation of water in the Bay and to create islands for wildlife with the dredge spoils. There are other projects in which similar attempts are being made to expand the habitat of certain desirable species. However, we feel the Corps is wrong in claiming that these types of purely mitigative action are really environmental "enhancement."

For those navigation projects that are already constructed, or undoubtedly will be constructed, the Corps should do everything possible to replace lost habitat and maintain species diversity, but this should be called mitigation rather than "enhancement." No one can validly say that increasing the range of rock bass by constructing a navigation canal is ecological "enhancement," because no one knows the long-range effect of this ecosystem change. The same applies to Tampa Bay. We are not saying there is no value in these mitigative efforts, in fact, the increase in recreation from such Corps efforts is doing much to give many Americans a greater appreciation and understanding of natural systems (even though they have been altered by man). What the Corps and public must not lose sight of is the fact that man can no longer destroy and change our natural environment and then "enhance" it. Man must learn to work within natural systems in such a way that it will not be necessary to mitigate or "enhance." With our present economy and water resource technology this is not possible. We must have a new economic and water resources development philosophy.

There are many geologic ramifications in most navigation projects, particularly on inland rivers. Channelization decreases the surface area-to-volume ratio of a stream and increases drainage velocities. If the free-flowing area downstream from a navigation project is not capable of handling the increased volume during the flood season, flooding can be more severe than in the past and important changes can occur in the shape and location of the riverbed. An increase in the runoff velocity of a stream results in a decrease of the availability of that water to the ground water table. Ground water supplies can be decreased, the depth of wells increased, and water shortages during periods of drought can become more severe. Increasing water velocity also increases the ability of the river to move silt, gravel and larger stones. In fact, by merely doubling the velocity of a river, its transporting capability is increased four to eight times. This can develop areas of severe erosion and deposition downstream and can cause a marked increase in turbidity levels and a significant decrease in water quality.

From its source to its mouth, a stream follows the path of least resistance. As flow and volume fluctuate, these paths change; thus the stream's course and streambed cross-section fluctuate also. These hydrodynamic aspects of rivers have often been overlooked by the Corps and have resulted in significant overruns of dredging costs. In the case of the Upper Columbia River Navigation Plan, the Corps failed to consider the highly unstable condition of the gravel streambed and the ability of a river this size to move these gravels. Its plan for dredging covered a period of four years which would be followed by a small amount of annual maintenance work. Comments from geologists and hydrologists who have studied the area thoroughly indicated the river could possibly move enough gravel annually to make heavy dredging a full-time operation. The gravel beds underlying the river are 200-300 feet in depth--no amount of dredging could create a hydrodynamically stable streambed. The Corps' study completely overlooked this aspect and the economic and environmental implications thereof. Any river in its natural state has its particular dimensions as a result of geologic processes which evolve toward an increasingly stable hydrodynamic condition. Man-made perturbations will only result in the river trying to adjust back to its former, more stable condition. Man cannot geologically improve either on the natural ability of a stream to carry water to its destination efficiently (cost-wise), or on a stream's natural capacity to provide rejuvenation to ground water supplies. A stream does these two things as best as nature knows how, and it is free.

The possible damage to a stream's ecology as a result of dredging is very significant. Disturbing a stream's bottom can release vast quantities of silt and sand which are deposited downstream, virtually destroying the former habitat. In many streams the downstream impact on game fishes can be disastrous. Silting can asphyxiate the eggs and fry of salmon, steelhead, walleye, catfish, sturgeon and many other species. If dredging occurs annually during the spawning and incubation stages of fish development, it is conceivable that the entire population of a species could be eliminated. Anadramous fish return every four years to spawn where they were hatched. If the eggs and fry were destroyed for four consecutive years, that particular population could be considered extinct. Where there are existing salmonid spawning grounds, dredging should be avoided or programmed so as to avoid covering the spawning gravels. Once a bed is covered it is useless for salmonid reproduction. Warm water species that are accustomed to higher turbidity levels (as in the Midwest) may be less adversely affected by dredging operations. However, the possible impact should not be overlooked in any particular habitat, whether it's warm or cold water.

In the planning of navigation projects where dredging is required, conservation groups should demand inclusion of specific plans for the deposition of spoil to minimize the environmental impact. Sometimes, the Corps has deposited spoil indiscriminately in the water and on land. Plans should include specific measures to avoid damage to fish and wildlife habitat, archeological sites, and riparian habitat in general. Dredging in estuaries should be scrutinized to avoid destruction of unique freshwater and saltwater ecosystems. There are several methods of dredging available including suction dredging and shoveling. Depending on the biomass, geology and water quality of the area involved, one or the other method may be more suitable ecologically.

A possible positive effect from shallow estuary dredging has recently been discovered. The polluted ooze so often found in brackish waters has been found to make excellent bricks for construction purposes at roughly one-half the cost of conventional bricks. The added benefit of removing pollutants from the estuary's bottom could result--as well as cheaper construction costs. However, there is evidence which indicates that dredging polluted ooze may release heavy metals and pesticides into the water which had settled in the mud. The net ecological effect would probably be negative.

The water quality of a navigable waterway may be degraded as a result of its use by commercial vessels. If the commerical traffic envisioned as a benefit of the navigation project occurs as planned, then the banks of the river, lake, or canal may become a significant industrial site, crowded with businesses, warehouses, storage depots, and the like at terminal facilities. There operations are necessary accoutrements of commerical development, and cannot be considered bad with a jerk of the conservationist's knee. But as with a dam, the effects of a navigation project must be considered carefully. The Corps--with the help of the Congress and the public--must decide whether the project is economically, ecologically, and socially justified.

Urban Flood Control

Individual urban flood control projects are relatively small in size of expenditure and in their environmental impact when compared to most reservoir and navigation projects. But as the major dam sites on our rivers are used up and the nation becomes more and more urbanized, the Corps spends more of its efforts and dollars on urban flood control projects. They are very numerous, and if one looks at the impact of the sum of these urban projects, the ecological implications can be very signigicant. A hypothetical case might illustrate this principle best.

Fickle River flows for 100 miles from the Appalachian Mountains through the Midwest into San Francisco Bay. (Urban flood control happens everywhere.) It has minor spring flooding annually,and severe flooding can be expected once every 12 years on the average. The severe floods cause extensive damage in 25 of the 50 small communities along its banks. The other 25 sustain consistently minor damage. A coalition of town councils from all 50 towns have asked the Corps to do a study to find the best solution to ending their flood problems. The alternative that the Corps offers is to construct rectangular, concrete-lined channels where extensive damage occurs. For each of the 25 towns involved this will amount to an average of 1.5 miles of concrete channel to protect each town. Where minor damage occurs,an average of 1 mile of levees with channel-clearing and straightening will be constructed. There will be a total of 37.5 miles of concrete channel and 25 miles of levees and straightening. The Corps plans to complete the project over a 20-year period. The benefit-cost ratio of the separate projects is 3 to 1 on the average, and 3 to 1 for the comprehensive plan.

Obviously, each individual 1.5 or 1 mile project would be difficult to dispute on environmental grounds unless a unique resource (such as a waterfowl nesting area) was involved. The b/c ratio seems to make the project for each town highly justified. However, the most important aspect to study may not be each small channel or levee, but the impact of the implementation of the entire project (the summation effect). Of the 100 miles of river, two-thirds of it

(67.5 miles) are going to be either concrete lined or straightened and diked. Citizens should ask such questions as: What effect will this have on the ground water table? What will happen to the remaining unchanged 32.5 miles during a heavy flood? Can the unaltered stretches handle the increased volume and velocity? What effect will the more rapid flow of water downstream have on water quality, water supply, irrigation, and recreation? What are the possible effects on the river and Bay ecosystems? What are the possible effects on local agricultural practices? There are many more questions that should be answered in view of the particular region and watershed involved. This idea of studying the gross environmental effects of entire river basin projects has been too little pursued by both the Corps and citizen groups, but beyond a doubt is a necessity in all future planning.

The only significant work available at this time concerning flood control projects of the Corps and our environment is a study completed by Rivkin/Carson, Inc., 3039 M St., N.W., Washington, D.C. 20007. This booklet is entitled "Achievement of Environmental Quality in Flood Control" and is available at the above address. Rivkin/Carson, Inc. is a firm involved with planning and research for urban development and was contracted by the Corps to conduct a case study and:

1) "To develop a framework for flood control project formulation which respects environmental quality."

2) "To suggest procedures that generate an understanding of the environmental elements and forces at work, and to elicit and establish environmental objectives."

3) "To suggest practical methods for planning and designing projects which ensure the attainment of environmental objectives."

The Corps' View of the Environment

Despite some recent improvement in relations between the Corps of Engineers and the conservation-minded community, there remains a basic philosophical difference which is difficult, at least for the present, to bridge. The Corps is committed to the idea of maximum development of our water resources; that is, in response to what they view as the desires of the public, they seek to "harness"--or sometimes to "enhance," "improve," "develop," or even "unlock"--the waters which flow through our rivers and streams. To leave a river pristine is to waste it, according to this mode of thought. The Corps often sees itself as "moulding the environment for man," which is precisely opposite of what our human philosophy should be concerning our environment. In considering various alternatives for project plans, the Corps puts its expertise to work to determining which alternative to follow, and gives less emphasis to the "do nothing" alternative.

On the other hand, there are many among the environmental activists who have made it their mission to preserve all remaining unspoiled areas in their natural state. These people believe their stand is not an uncompromising one, since (the argument goes) about 90% of the nation's water resources have already been compromised by the Corps and other developers, public and private. To ask that the remaining 10% be left in their natural state is hardly being fanatical, in the preservationists' view.

Supreme Court Justice William O. Douglas is one of the best-known spokesman for the preservationist viewpoint. In a 1969 Playboy article, Justice Douglas described his personal efforts to stop a Corps of Engineers project and described his feelings about the natural environment the project would destroy:

> Down in Kentucky last year, my wife and I led a protest hike against the plans of the Corps to build a dam that would flood the Red River Gorge. This gorge, which is on the north fork of Red River, is a unique form of wilderness that took wind and water some 60,000,000 years to carve out.
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> This is Daniel Boone country possessed by bear, deer and wild turkey. It has enough water for canoeing a few months out of the year. It is a wild, narrow, tortuous gorge that youngsters 100 years from now should have a chance to explore.
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> The gorge is only about 600 feet deep; but the drop in altitude in the narrow gulch produces a unique botanical garden. From March to November, a different wild flower blooms every day along the trails and across the cliffs.
>
> This is wonderland to preserve, not to destroy.
>
> Why should it be destroyed?

While those who seek to preserve the environment see the Corps as "public enemy number one" (as Justice Douglas has said), some Corps officials are often just as cynical about its opponents, calling them "bird and bunny people" and "little old ladies in tennis shoes." Clearly, almost any real dialogue between the public and the Corps would be an improvement over this sort of name-calling, as we emphasized in Chapter 2. And there are definite indications that, while the conservation community is taking a more disciplined, knowledgeable approach to the Corps, the Corps itself is paying more and more attention to environmental questions in project planning.

The Office of the Chief of Engineers (OCE) established a Recreation and Environmental Branch within its Planning decision in 1966. In Washington, the Environmental Branch studies broad areas of environmental concern and draws up guidelines for assuring that environmental considerations are plugged into any project planning process. The Board of Engineers for Rivers and Harbors, the Washington agency which reviews all Corps projects before the Chief of Engineers decides whether or not to transmit them to Congress, established an Environmental Division in January, 1971.

The Institute for Water Resources, a policy study branch of the Corps, published a pamphlet of Environmental Guidelines for the Civil Works Program of the Corps of Engineers in November, 1970. The pamphlet is the official Corps statement of its environmental policy, objectives and guidelines, and says, in part:

> Although extensive, our natural environment and the resources it contains are finite. When our Nation was young, the demands the American people placed on nature appeared negligible in comparison with the quantities of resources available for them to use. But our population, once small, is now large and is still growing. At the same time our material standard of living is steadily rising. We live in a period of ever-increasing demands for natural resources on one hand, and of ever-diminishing supplies on the other. It is clear that there is a limit to the burden our natural environment can bear, and that we must conserve our resources and use them wisely.
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> Only recently have many people come to realize that growing demands for resource consumption pose

serious threats to their environment; that man's environment is composed of interdependent systems both natural and man-made; and that abuse of one system jeopardizes the quality of the others and ultimately the survival of all.

Traditionally Americans have sought economic growth and development. To that end, the Corps of Engineers has planned,designed, and constructed many projects to control and facilitate the use of water resources by the American people whom we serve.

Today, we in the Corps face an apparent dilemma. We are still called upon to meet increasing demands for resources to support a higher standard of living for more Americans. And now we are also being called upon to conserve those same resources in order to preserve the quality of the natural environment in which our people live.

But these apparently conflicting demands need not be mutually exclusive. There are many means available to us for accomplishing both. We can continue to serve the American people effectively and economically and at the same time meet the requirements of a quality environment.

Reconciling the demands for development and utilization with those for conservation calls for reorienting our previous policy that was primarily concerned with national economic efficiency. We must give environmental values the full consideration that is their due. . .

. . . on June 2, 1970, the Chief of Engineers announced his policy with respect to the environmental aspects of the Corps' mission:

> --In full consonance with the National Environmental Policy Act of 1969, the Environmental Quality Improvement Act of 1970 and other environmental authorities promulgated by the Congress and the Executive Branch, our overall objective in accordance with our mission will be to seek to balance the environmental and developmental needs of our Nation.
>
> --We will examine carefully environmental values when studying alternative means of meeting the competing demands of human needs.
>
> --Best solutions must be found to problems meeting needs and aspirations of the people we serve, not merely determination

of whether a specific engineering solution is economically justified.

--In recognition of the highly complex relationship between nature and man, we will encourage and support efforts to bring the best existing ecological knowledge and insights to bear on the planning, development and management of the Nation's water and related resources.

-- Environmental values will be given full consideration along with economic, social and technical factors.

--Special efforts will be made so that resource options will be kept open for future generations.

--We will encourage as broad public and private participation as practical in defining environmental objectives and in eliciting viewpoints of what the public wants and expects as well as what it is projected to need.

--Acting as moderators and advisors, we will provide governmental and nongovernmental agencies and the public with timely information on opportunities, consequences, benefits and costs--financial and environmental--before making recommendations based on a balanced evaluation of the social, economic, monetary and environmental considerations involved.

OBJECTIVES

Implicit in this policy are four general environmental objectives for the Corps:

a. To preserve unique and important ecological, aesthetic, and cultural values of our national heritage.

b. To conserve and use wisely the natural resources of our Nation for the benefit of present and future generations.

c. To enhance, maintain, and restore the natural and man-made environment in terms of its productivity, variety, spaciousness, beauty, and other measures of quality.

d. To create new opportunities for the American people to use and enjoy their environment.

GUIDELINES

Our objectives can be translated into guidelines governing the Corps of Engineers' Civil Works program.

The Corps and the Public. As a public agency the corps responds to the public interest. That interest synthesizes many needs, desires and aspirations. It finds expression in the views of individuals and groups and their representatives at local, State and Federal levels of government. We in the Corps of Engineers have an obligation to receive these views, to know what they are and to accommodate them insofar as possible. We are equally obligated to provide information to those who express these views, so that they can understand our activities and responsibilities.

Our relationship with the American public requires a continuing dialog; without it, we cannot know the public interest. Without such knowledge, the projects that we build are not likely to serve that interest.

To ensure that we do respond to the public interest, we must seek out its expressions. This is not merely a matter of meeting others half-way; we must do whatever is necessary to obtain the wide range of views which make up the public interest. These often divergent views must be injected into every aspect of our work. They must be introduced during the earliest stage of our consideration of a project and reconsidered at every subsequent stage.

Among the most important of the views that we must obtain and consider are those concerned with environmental values. Altogether too often the environmental viewpoint has not crystallized until a project was under construction. This is not good for those concerned with the environment--their intentions are not realized; it is not good for the Corps--we do not achieve our objectives; it is not good for the American people--their best interests are not served. For these reasons we must take positive measures to insure that considerations of all elements of the public interest, including the environmental viewpoint, are introduced into each phase of our programs.

CONCLUSION

In essence, we seek to introduce an environmental viewpoint when our projects first come under consideration

> and to receive and accommodate it at every subsequent stage of their development and utilization. In achieving this end, we require the full cooperation of every employee of the Corps of Engineers, and we invite the participation of all other concerned Americans.

The Corps efforts to delineate what it feels is the best way to approach its ecology problems are commendable and far more advanced than many of the other Federal agencies with environmental concerns. However, we definitely feel that the Corps and all other agencies involved with water resources are only admitting there is a problem and are only seeking ways to soften or lessen the ecological impact of projects rather than eliminate it. This is essentially what all laws concerning our environment do (such as the National Environmental Policy Act of 1969): they only lessen the effect of a problem; they don't attack the cause. The problem is natural disorder caused by man.

We would like to provide our views on some of the statements made by the Corps in their Environmental Guidelines. . . pamphlet in hopes that both the Corps and the public will take a broader and longer-range wiew of the causes of our national and world-wide environmental problem, not the effects.

In "The Need for Redirection" the Corps states ". . . that man's environment is composed of interdependent systems both natural and man-made; and that abuse of one system jeopardizes the qualities of the other and ultimately the survival of all." We submit that natural and man-made systems are definitely not interdependent. The dependency is only one-way: man must continue exploiting natural resources under his present economic and political structure, therefore man depends on nature to maintain and expand his economic development ideology. Nature can only depend on man to destroy it, if he keeps consuming natural resources as he does. Nature does not today, depend on man to keep funtioning in an orderly fashion. To develop man-made systems that are interdependent with natural systems, that is man-made systems that function in harmony with natural systems, should be a world-wide technological goal of mankind. But to say that these two systems are, today, interdependent is wrong. We have war, poverty, racism and pollution to prove that man is not interdependent with nature.

In the same section the Corps states ". . . these apparently conflicting demands (conservation vs development) need not be mutually exclusive. We can continue to serve the American people effectively and economically and at the same time meet the requirements of a quality environment." Conservation and economic development are absolutely mutually exclusive in our present-day society. America is overpopulated and populating at an increasing rate; America overconsumes resources and is increasing its per capita consumption, and America has an economic philosophy based on continual economic expansion which both promotes and thrives on, overpopulation and overconsumption. To conserve our natural resources we must have a stable population, a lower level of consumption (with no decrease in the quality of life) and an economy based on the total recycling of our resources. So what we have today is the exact negation of what we should have to conserve resources. However, a new conservation ethic would in no way preclude "development," it would only stipulate that we redefine development to mean the building of a culture (Hopefully worldwide) in which man exists in complete harmony with natural systems and therefore with his fellow man.

Under our present economic system and the conditions of overpopulation and overconsumption the Corps cannot ". . . continue to serve the American people. . ." ". . . and meet the requirements of a quality environment. . . " if in fact, the Corps really wishes to conserve our resources. The Corps only builds projects which maintain and promote overpopulation and overconsumption, therefore they are perpetuating continual economic expansion. The only "requirement" of a quality environment is that it functions in an orderly way: that it be diversified and uninterrupted (cyclic). Overpopulation, overconsumption and continual expansion destroy and simplify our environment: the biosphere is becoming simplified and less stable and man-made systems are interrupting the natural cycles of the earth. Therefore, we suggest that Corps projects are not meeting the ". . . requirements of a quality environment," but are only destroying them, and their projects are not serving people since they promote the three causes of our natural disorder, expansion, overpopulation and overconsumption. This leads to all our human and ecological conflicts.

Under the same ". . . Redirection. . ." heading,the Corps says, "Reconciling the demands for development and utilization with these for conservation calls for reorienting our previous policy that was primarily concerned with national economic efficiency. We must give environmental values the full consideration that is their due." We concur that the Corps should reorient its policy, but it obviously is a very minor shift in light of the discussion above. If our society, including our economy, were based on ecological principles, there would be no "reconciling" of any demands. We would have development and utilization within ecological constraints that would develop means of producing goods from renewable resources such as wood. Non-renewable resources would not be used except in emergencies or, until "renewable resource technology" is sufficiently developed, non-renewable resources (oil, uranium) would be used in man-made systems that are 100 per cent efficient. All the Corps has really said about "reconciling" is that they will continue to develop and exploit resources, then consider the ecological impact of their projects and try to cover up the impact, not eliminate it. This is the exact opposite approach which they should be taking. The Corps should base all its policy, objectives and guidelines on ecological principles, then decide what they can develop and where and when they can take action.

Is there any value in environmental legislation such as the National Environmental Policy Act of 1969, or Fish and Wildlife Coordination Act? As far as working toward a solution to our problem of natural disorder, by way of correcting overconsumption, overpopulation and economic expansion, there is no value in these laws. Government agencies which abide by these mandates are only masquerading as organizations of ecological reform. The present laws concerning ecological impact are only an after-the-fact beautification program, saying in effect, go ahead and rip-off our ecosphere (with caution) then dress it up a little after you're done. This perpetuates the same environmental injuries as before except it throws in some bandaids and mercurochrome, at added cost.

However, an equally important question to ask is; is there any value in these laws which will bring people to a level at which they understand the importance of ecology and understand what man is doing to the ecology of the earth? The answer is definitely yes! Herein lies the real worth of our present-day eco-legislation. It will help people and agencies become aware of our deteriorating environment and once they realize how critical some situations are, then they can develop the technology to eliminate overpopulation, overconsumption and continual economic expansion. To develop solutions, man must first realize the problem. There are very few who are aware of the existing crises and our present laws will hopefully do much to increase the number of aware people. We hope most people will make the transition from L. Clark Stevens "linear Establishment" to his "simulsense" generation or from Consciousness I and Consciousness II to Consciousness III as defined by Charles Reich. Every government agency should be a "simulsense" or "Consciousness III" group. This kind of spontaneous society must come soon if we are to survive.

So we find that there is some good in the Corps' eco-philosophy in that it is a small step in the right direction. But we also find that the Corps must immediately begin taking the next step: from making people aware to doing their part to eliminate overpopulation, overconsumption and a continually expanding economy.

At the District and Division levels, an environmental staff of one to eighteen may include sanitary engineers, landscape architects, biologists, recreation specialists, and geologists to study all environmental aspects of specific projects for the District or Division. To date, the Recreation and Environmental Branch has been concerned more with recreation than with our total environment, but as public pressure for the salvation of our environment grows, the Branch should concern itself more and more with conservation and preservation. Citizens should try to learn how adequately staffed a particular Division or District office is and whether it is capable of studying the numerous environmental and social aspects of water resource projects. An environmental branch with a converted engineer, or an architect or a recreation specialist serving as the "Environmental specialist" for that district is not properly staffed. Citizens must encourage and prod the Corps into developing environmental departments with a multidisciplinary approach. When specialists, such as aquatic biologists, geologists or wildlife biologists, are not available for hire, then the Corps is obligated to seek consultant firms with the relevant expertise so that they may prepare environmental statements that conform with the present guidelines.

Environmental Advisory Board

In April of 1970, the Corps of Engineers appointed six private citizens to a new Corps Environmental Advisory Board. In announcing the formation of the board, the Chief of Engineers, Lt. Gen. F.J. Clarke, said,

> ...as the environmental problems and issues attendant

> to our activity become more complex, I strongly feel the need for assistance from a group of advisors external to the Corps who could provide not only a broad range of knowledge, expertise and experience, but also a philosophy and perspective that has not yet been fully developed within the Corps. I expect this Board to be a working board and I plan to use it extensively. I expect that it will provide not only advice on specific policies, programs and problems, but perhaps more important contribute to an enhanced mutual understanding and confidence between the Corps and both the general public and the conservation community. (emphasis added)

Duties undertaken by the members of the Environmental Advisory Board, as defined in the Corps specifications, include:

1) Reviewing, commenting and making recommendations on existing and proposed policies and activities.

2) Advising of specific projects where environmental controversies have arisen.

3) Working as individuals within their areas of special expertise to advise on relevant issues or to participate in the development or conduct of seminars or short courses.

The key word in all this is "advisory." The Board lacks the authority to make policy or veto projects or permits, although it has been asking for this power. However, in at least one instance, the Board has provided important leverage for conservation forces. As we shall see in our case study of the Cross-Florida Barge Canal (later in this book), public knowledge that a Board member has serious doubts about the worth of the project can add weight to a court argument for a citizens' group seeking to enjoin the project (although that has certainly not General Clarke's intention in creating the Board). The present Board, chaired by Roland C. Clement, who has been the Vice President of the National Audubon Society, has requested new studies of many controversial Corps proposals, including the Barge Canal (on which construction has now halted), the Oakley Dam in Illinois which has not yet been started, and the Upper Columbia River Navigation Plan.

On paper the Advisory Board appears as a serious Corps attempt to seek competent ecological advice. However, comments by individual Board members indicate that the corps is not seeking their advice in all cases, and when it does it sometimes does not act on that information or even considers it. The Advisory Board met with the Corps in June 1971 to present a list of suggestions for improving the Corps planning procedure, public participation and ecological awareness. Two basic areas of disagreement were whether or not the Board should have veto power over controversial projects (which they did not get) and whether or not there should be local citizen advisory boards at the district level of the Corps (which the Corps did not want to have). The Corps had previously tried district advisory boards with what they said were negative results. All other suggestions presented by the Board met with general agreement by the Corps. However, Board members were quick to point out, agreeing with suggestions and actually considering and implementing them are two entirely different matters. The Advisory Board feels most of their suggestions are taken too lightly and not implemented by the Corps. Individual Board members are considering resigning in view of their relative ineffectiveness and the fact that they feel they are nothing more than public relations appointees.

Charles H. Stoddard, a resource consultant, past Chairman of the Advisory Board and a present member of that Board, sent a letter to Gen. F. J. Clarke, Chief of the U. S. Army Corps of Engineers following the June 1971 meeting between the Board and the Corps in Wash., D.C. The letter is Stoddard's personal appraisal of the first year's work of the Board and future board functions. Stoddard commends the Corps for its progress (sometimes overcautious and deliberate) in enforcing the 1899 Refuse Act and in its apparent attempt to seek waste water management authority. However, in the water resources development field where the Board has concentrated its efforts, Stoddard is quite critical of the Corps for not implementing more comprehensive environmental planning procedures, for failing to take immediate action on controversial projects, using the Board's recommendations, and for not seeking and using the Board's expertise in developing seminars and short courses for Corps personnel.

In a concluding statement Stoddard has this to say, ". . . in view of our near zero batting average, I am fearful that the Board's existence may be giving the Congress and an anxious public an impression of progress, when there is precious little. Even more to the point, it is quite clear to me that basic changes, both institutional and procedural, are necessary if the problems we face in water resource development prospects are to be squarely faced. When internal reform is not forthcoming, it calls forth external pressures for change."

Stoddard continues by offering what he feels would be a major step in eliminating our present eco-destructive trend;

"Of first importance is establishment of an independent appellate body with veto power over environmentally harmful projects, including A.E.C. power, highways, Soil Conservation Service, wetland drainage, Reclamation and Corps. Such a body is needed to restore equality of participation by American citizens in the decisions affecting them. . . These concepts are implied in the Percy Bill (s.4307), giving the Environmental Advisory Board statutory authority for project review and appeals. Along with an independent appeal system, a munber of structural reforms also are needed to correct the causes of present problems."

It remains to be seen whether the Advisory Board continues in existence. Board members feel they are not being listened to and the idea of such a Board is misleading the public. Rather than waste the Board's time and give the public a false impression, Board members are considering resigning.

National Environmental Policy Act of 1969

Citizens gained a new weapon in the effort to retain and restore environmental quality with the passage of the National Environmental Policy Act of 1969. Section 101 of that law speaks in general terms of the Federal government's commitment to a policy of ecological responsibility. In the words of the 1969 law, it is the aim of national policy to:

1) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

2) Assure for all Americans safe, healthful, productive and esthetically and culturally pleasing surroundings;

3) Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

4) Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;

5) Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

6) Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

While environmentalists applaud the general orientation of the law, the actual tool for citizens' use is found in Section 102, which requires all federal agencies contemplating "actions significantly affecting the human environment" to prepare a detailed statement of the probable impact of their actions. The Corps of Engineers must submit an environmental impact statement (often called a 102 statement) for each public works project it proposes to build.

The Corps is expected to consult with other Federal and state agencies in the preparation of its environmental statements and to include the comments of these agencies and concerned citizens in its final statement. Federal agencies usually consulted include the Fish and Wildlife Service of the Interior Department, the Office of Water Quality within the Environmental Protection Agency, and the President's Water Resources Council. The environmental impact statement is aimed at ensuring that "presently unquantified environmental amenities and values" are given "appropriate consideration in decision-making along with economic and technical considerations." 102 statements must include detailed information about the following five points:

1. The environmental impact
2. Unavoidable adverse environmental effects
3. Alternatives to the proposed action
4. The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity; and
5. Any irreversible and irretrievable commitments of resources involved.

Where does the citizens' group fit into the 102 process? Theoretically, environmental groups should be able to use the 102 statements to check both the Corps' and their own assessments of the environmental impact of a proposed project. To do this effectively, groups should obtain copies of the 102 statements as early as possible in the planning process. The Corps' own guidelines state that the preliminary draft environmental statement, prepared at the District level, "may be provided, upon request, for review and comment to interested citizen groups and to groups which have actively participated in the project study." Hopefully, environmental groups will have made their interest well-known, along with the Chamber of Commerce, real estate and transportation interests and the like.

When citizens believe that a Corps 102 statement is incomplete or inaccurate in its assessment of environmental impact, they should reply to the statement in writing. Their criticisms should be sent directly to the Corps, as well as to the Council on Environmental Quality, the Public Works Committees, the local Congressional delegation, the President--and the Press. Such a rebuttal might be used at public meetings in the revision and finalization of the Statement, or in critical instances, in litigation.

The Corps' Record of Compliance

As is usually the case with landmark legislation, the real impact of the law could not be assessed until compliance or non-compliance could be observed over a period of several months. In 1970, the performance of all the Federal agencies, including the Corps, was less than satisfactory. Some agencies simply did not file the necessary environmental impact statements. The Corps of Engineers did file statements and appeared anxious to comply with the law; if its statements were frequently late and insufficiently detailed, we can only hope that these shortcomings were attributable to the administrative problems of initiating a new procedure.

Basically, the problems surrounding the 102 process can be summarized in three areas: 1) timing of completion and availability to the public; 2) content of the statements themselves; and 3) use and review of the statements by other agencies, particularly the Council on Environmental Quality, OMB, and the Public Works Committees.

Because of the crunch involved in preparing some 88 statements to accompany the 1970 Omnibus Rivers and Harbors bill through Congress, most of the statements didn't even exist in draft form until after the last public hearings were held on the bill. While this may have been unavoidable in this first year, it is clearly inconsistent with the intent of the Act. The Council on Environmental Quality recently enacted new guidelines which should do much to relieve the problem. The guidelines state:

> In accord with the policy of the N.E.P.A. and Executive Order 11514 agencies have a responsibility to develop procedures to ensure the fullest practicable provision of timely public information and understanding of Federal plans and programs with environmental impact in order to obtain the views of interested parties. These procedures shall include, whenever appropriate, provisions for public hearings and shall provide the public with relevant information, including information on alternative courses of action.

The CEQ guidelines go on to require a time-lapse of 90 days after the public release of a draft statement (or 30 days after release of a final statement) before an "administrative action" affecting the environment may be taken. Army Corps projects are legislative (not administrative) actions prior to authorization (Step 12). After authorization, most action is administrative within the Corps. The guidelines do not set a specific time requirement for 102 statements on legislation, but they do indicate that delivery after the last Congressional hearing will no longer be acceptable:

> With respect to recommendations or reports on proposals for legislation to which Section 102(2)(C) applies, the final text of the environmental statement should be available to the Congress and the public in advance of any relevant Congressional hearings ...the environmental statement and comments should be made available to the public at the same time they are furnished to the Congress.

In the case of hearings held by the Corps itself, the statements must be released to the public fifteen days prior to the hearings. The guidelines do not make such a specification for Congressional hearings, however; we can only hope that the Corps will not consider its duty completed if it supplies statements to the public and the Congress one day before scheduled hearings. Citizens could hardly prepare testimony based on the 102 statement in so short a time. At this writing the new CEQ guidelines are not final; perhaps the Council will see fit to close this loophole by requiring that the statements be provided to Congress and the public at the same time that the legislation itself is sent to the Hill. Given the slow pace of Congress, this would surely guarantee a lapse of at least 15 days before hearings, and probably a period of 90 days before the bill was voted upon.

The problems of content may be more difficult to correct than those of timeing and availability to the public. Malcom Baldwin, Senior Legal Associate of The Conservation Foundation, has outlined in a C.F. memorandum some of the major shortcomings in the content of the 102 statements in the 1970 bill:

1) None of the statement describes the exact nature of the projects or provides maps.

2) In almost all cases, the statements have a marked advocatorial tone and are based on data selected to support the Corps' proposal.

3) The Corps tends to stress the favorable impact of its projects upon the industrial and economic environment, and minimize the impact upon the natural environment.

4) The statements are not footnoted or documented in a manner to help citizens find data with which to check the Corps' conclusions.

5) Most of the statements provide only a limited examination of alternatives, particularly the alternative of "no action."

6) Statements tend to ignore the secondary effects of the projects, such as detrimental results of increased land use or traffic. When such effects are mentioned, they are not examined in detail. (Baldwin "A Review of Corps of Engineers Practices Under Section 102 (2) (C) of the National Environmental Policy Act",unpublished, passim.)

Baldwin offers several suggestions for improving environmental impact statements in the future, including a correction of the defects mentioned above, and the following additions:

1) A description of the valuable resources of the project area, including a catalogue of the types and quantity of wildlife.

2) A detailed consideration of the effect the project might have at various stages in the wildlife cycle, including the costs and benefits of these wildlife and natural resources.

3) An analysis of other agency or public opposition to the project.
(Ibid., pp.17-18.)

Baldwin offers qualified praise of the Corps' efforts:

> Criticisms of the Corps practices under Section 102 should not obscure the fact that the Corps has shown, compared to other agencies, an unusual sensitivity to the mandate of of NEPA and encouraging capacity to improve its performance. There is good reason to believe that the environmental statements to come out of the Corps in the future will be significantly better than those of the past.
>
> (*Ibid.*, p. 18)

Probably the most difficult improvement will be the abolishment of the argumentative tone of Corps of Engineers environmental impact statements. Many people question whether the statements should be prepared by the Corps itself and suggest that they come instead from an independent agency. They assert that the Corps wants to build dams and canals; after all, that is how it earns its keep. How, then, they ask, can it be truly objective in its assessment of environmental effects? Might not the Environmental Protection Agency do a better job? (In somewhat the same vein of thought, many critics of the Army Corps have suggested that the initial cost/benefit analysis should be done by the Office of Management and Budget rather than by the Corps.)

In reporting on the 1970 Rivers and Harbors Act, the Senate Public Works Committee expressed dissatisfaction with the persuasive attitude in the Corps' environmental statements:

> Guidelines developed by the Council on Environmental Quality require that environmental impact agencies circulate draft 'environmental' statements to the environmental control agencies for comment. Present practice tends to result in environmental agencies examining the views of the impact agency, rather than the impact of the project on the environment. The committee is concerned that this may tend toward developing a self-serving justification for environmental impact rather than a review of that impact.
>
> (Senate Report 91-1422, accompanying the 1970 Rivers and Harbors Authorization Act, December 8, 1970, p. 6.)

The Committee has promised a review of the entire Corps of Engineers authorization in the 92nd Congress; perhaps the Committee will consider the question of objectivity in assessing costs, benefits, and environmental effects. A Committee staff member has said that the review of Corps policies and procedures will depend upon active public pressure, since the plan for review is controversial even within the committee. He has urged citizens' groups to contact the Committee to present their ideas and express their willingness to testify. He has also put forth his own suggestion for solving the objectivity problem. Calling the practice of allowing the Corps to assess its own environmental impact "disastrous" and describing the 102 statements issued to date as "mere rhetorical exercises," he suggests a system of spot checks at the site of proposed projects. Such checks would be made outside the usual Corps channels at the District level by task forces from the Environmental Protection Agency and would involve contact with local citizens who have made known their interest in the project.

In addition to the problems of timing and content, some significant problems have arisen relating to the effective review and use of environmental statements. The largest problem is the sheer number of statements and insufficient manpower to review them adequately -- or, in some cases, even to read them. Malcolm Baldwin has discussed this problem in reference to the 88 statements accompanying the 1970 Rivers and Harbors bill:

> Neither the CEQ, OMB, nor the other federal agencies are now able to review these in detail. Neither has the public works committee staff in the House and Senate the capacity. . . Major questions arise as to the utility of the 102 process given these review constraints.

It is in this respect that citizens can be very useful. Since local groups are most often interested in only one or two of the Corps projects, they can concentrate on those and give careful scrutiny to the environmental impact statements for the proposed Oakley Dam in Illinois. The Committee on Allerton Park (a citizens' group) has done a great deal of independent research and has been able to question many of the conclusions in the Corps' 102 statement on Oakley. A brief description of the Oakley controversy and a comparison between the findings of the Corps and the Committee on Allerton Park may be instructive for other citizens' groups.

A Case Study on 102 Statements: Oakley Dam vs. Allerton Park

In 1962, Congress authorized the construction of one dam (Oakley) on the Sangamon River in Illinois. The reservoir was to have a pool level at 621 feet above sea level. At this elevation, some flooding could be expected in the bottomlands of Allerton Park, a woodland park owned by the University of Illinois and used by the public for recreation and by the University for scientific research. The Corps listed project purposes as flood control, water supply for the city of Decatur, recreation. Estimated cost: $29 million.

Subsequent to the project authorization, the Corps made numerous changes and additions to the Oakley plans. In 1966, the Corps acted unilaterally (without public or Congressional hearings) to add 15 feet to the height of the dam, raising the pool level to 636 feet. At this height, damage to Allerton Park would be far more extensive. The cost of the project was then estimated at $64 million.

The Committee on Allerton Park was formed in 1967 with Bruce Hannon as its leader and spokesman. Its first activity was a petition drive, collecting 20,000 signatures against the project and recommending several alternatives. The Harza Engineering Company, under contract with the University of Illinois, also recommended ways to accomplish the same purposes without the increase in height of the dam. The following year the Committee collected 80,000 more signatures.

In 1969, the Corps again raised the height of the proposed dam and reservoir, this time to 640 feet. There were several factors behind this very substantial increase in the project size, among them:

1) The addition of storage water for the city of Decatur;
2) The addition of reservoir storage for low flow dilution in the river downstream from Decatur;
3) Revision of topographic analyses of the reservoir area, indicating the need for a higher level;
4) A switch in Federal economic planning policies from a 50-year to a 100-year economic life and a revision of predictions for siltation, together necessitating a near-tripling of the size of the sediment pool; and

5) a revised analysis of historic flood patterns, causing the addition of 36,200 acre feet of flood storage.

Project cost was then estimated at $75 million. The illinois Division of Waterways suggested an alternative (known thereafter as the "Waterways Alternative") which would restore the original 621-foot elevation for the reservoir and include a "greenbelt" of undeveloped open space for recreation for 100 miles downstream from the dam. The University, the State, and the city of Decatur, signed an agreement supporting the waterways alternative. The Committee on Allerton Park stated that it would not oppose the plan, provided the Corps agreed to its terms. The Corps did not state its position that year. Meanwhile, the Illinois Water Survey reported that the city of Decatur had a large,high-quality underground water supply potential which could provide as much water as the proposed reservoir without the nitrate and eutrophication problem anticipated in the reservoir by state and federal water quality officials.

The Committee and the Corps finally clashed head-on in 1970. The Corps made some changes in the design again, this time raising the pool level to 623'. The Corps submitted an environmental impact statement to which the Committee took point-by-point exception. The Committee, along with the Environmental Defense Fund and other local parties, filed suit in U.S. District Court in Washington, D.C., aimed at stopping the whole project. The Suit was based on a contention that the 1962 authorization had been violated by vastly increased cost and significant changes in design, and on a claim that the National Environmental Policy Act of 1969 had not been observed, since the 102 statement was far from satisfactory. The suit was still pending in early 1971.

Below is a chart summarizing the Corps' five-point environmental statement on Oakley and the Committee on Allerton Park's rebuttal, taken from the testimony and statements of Committee members, consultants, and allies.

CORPS OF ENGINEERS

I. RECREATION

A. "The additional water-based recreation of the two reservoirs and greenbelt will greatly benefit the recreational environment of the project area. The proposed facilities will attract a large population of recreation seekers."

B. "Stream flow regulation will significantly enhance the recreation and aesthetic values of the Sangamon River below Decatur. The river will flow through a large tract of public land some 21,000 acres, called the greenbelt. This greenbelt is a significant contribution to environmental quality of the area. The benefits to the environmental quality of the area resulting from recreation and stream flow regulation are highly desirable."

COMMITTEE ON ALLTERTON PARK

I. RECREATION

A. "The State had planned to acquire the entire Sangamon River Valley under their Recreational Rivers plan. This would have made public access along the entire river and supplied the major portions of the recreation benefit now contemplated."

B. "The Corps claims almost half of the recreation benefit (15% of the total project benefits) will come from swimming in the Oakley Reservoir, despite a fluctuating water level, the anticipated algae and silt-ridden water, and the requirements and recommendations for body contact recreation."

"The recreational use of the proposed Reservoir has been greatly overestimated. Not only will the water be too shallow for good boating and too polluted for good swimming and fishing, there will be extensive mudflats surrounding much of the water during the summer. The mudflats will be exposed on the nearly level bottomlands covered by the shallow impoundment when the water level is reduced by summer drawdown.

"Anyone who has seen the Corps' Carlyle and Mansfield reservoirs knows that the fluctuating reservoir is hardly a thing of beauty especially when mudflats appear."

CORPS OF ENGINEERS	COMMITTEE ON ALLERTON PARK
II. FLOOD CONTROL	II. FLOOD CONTROL
A. "Flood control will serve to enhance the health and well-being of the downstream population. The documented flood damages attest to the fact that flooding reduces the environmental quality of the area. Not only does loss of life and property occur, but silt deposits build up, vegetation is destroyed, and the natural fish and wildlife habitat is disrupted. Flood control minimizes these disruptions in the downstream valley." "Flood control will enhance the scenic beauty of the river valley, and the periodic disruption of the fish and wildlife habitat will be reduced."	A. "Actually flood control will destroy the natural environmental quality of the area since, as a primitive habitat, the area requires periodic flooding. In line 4 /of the Corps' statement/, instead of lamenting that'silt deposits build up'as the result of flooding, such build-up is desirable in adding new soil and fertility to the area-this is what gives high productivity to farming on the flood plain. Reference is made in the 5th line that 'vegetation is destroyed. ' Actually the type of vegetation that occurs here is a type of vegetation that has evolved through the ages and is adapted to tolerate the natural pattern of flooding. Prevention of flooding will cause this unique vegetation to be replaced by quite a different kind of vegetation. Likewise, 'the natural fish and wildlife habitat' can only be preserved by allowing natural flooding...Instead of flood control' maintains the natural environment,' it completely changes it to another kind of environment." "Flooding does not reduce environmental quality in the downstream region, since flooding is a natural part of the downstream bottomland environment. The plants and animals as well as the farmers have adapted themselves to the local environment which must include flooding. Periodic natural bottomland flooding is essential to the life cycle of many of the bottomland species of plants and animals."
B. "Farmers will realize increased productivity from their livestock and crops."	B. "Much of the flooded land is in the federal idle-acres program where farmers are paid not to grow crops." "More farmland is permanently flooded upstream / if the dam is built/ than is permanently protected downststream."

CORPS OF ENGINEERS	COMMITTEE ON ALLERTON PARK
II. FLOOD CONTROL, Cont.	II. FLOOD CONTROL, Cont.
C. "Downstream urban communities will function in an orderly manner without the fear of severe flooding."	C. "The Corps does not claim flood damages in Decatur. The flood damage is almost exclusively agricultural and apparently exaggerated." ". . .less than 1% of the flood plain is now urban. The dam will probably induce more urban areas into the bottomlands. Since the dam only controls 15% of the Sangamon watershed, a 150 year storm will be passed through the dam and urban damage will be extensive. This is one of the reasons why Luther Carter said in Science in 1967, December, that the nation's flood damages are rising."

CORPS OF ENGINEERS	COMMITTEE ON ALLERTON PARK
III. WATER SUPPLY	III. WATER SUPPLY
A. "The recommended project will meet the increasing demand of water supply for Decatur. A dependable water supply will greatly aid the development of this city. Industry and commerce will continue to be attracted to the area. The water demands of an increasing residential population will also be met."	A. "The water in the Oakley reservoir may not meet federal (USPHS) drinking water standards. Illinois State Water Survey data clearly show precipitous increases in the nitrate concentrations in the Sangamon river which would flow into the Oakley reservoir... Indeed, the rate of increase has been so rapid that nitrate concentrations may exceed USPHS limits before the Oakley reservoir could be built and filled. Ground waters, on the other hand, exhibit low nitrate concentrations and may be inherently protected from increases in nitrate due to reducing conditions." "The potential for algae growth in the Oakley reservoir would be great owing to the availability of large amounts of nutrients. While algae blooms cause nuisances and contribute to tastes and odors, the chief influence of the algae growth would be to impair the operation and economy of water treatment plant processes."
B. "In particular, the use of ground water in lieu of water supply storage did not appear to be justified. Use of the ground water could seriously deplete this vital water reserve. The city of Decatur would have no control over ground water sources and would have the risk of wells going dry. The inclusion of storage for water supply in the recommended project is much more economical than the development of well fields to meet Decatur's year 2020 demands."	"The /Illinois/ State Water Survey conducted a study in 1968. From this study we concluded that the Mahomet Valley groundwater could meet the assumed demand of 26 million gallons per day without unreasonable interference with existing installations and their projected needs." "The use of ground water to supplement Decatur's water supply for the next 100 years has several very obvious advantages. Chiefly, the entire capacity need not be developed immediately, but as the demand develops.. Estimates of water needs might have to be estimated only 10 years in advance. Excess water capacity need not be carried in a reservoir for decades, even generations."

CORPS OF ENGINEERS	COMMITTEE ON ALLERTON PARK
IV. ALLERTON PARK	IV. ALLERTON PARK
A. "The project may induce slight changes in the Allerton Park bottomlands. The full extent of possible effects cannot be completely determined until they occur. However, there will be some change to the natural environment in the lower end of the park. Some research potential may be lost. However, this loss can be offset by staging the filling of the Oakley pool and a concurrent research program. Such a research program should establish base line data prior to filling the pool. As the pool is then filled to the 623.0 level over a period of time, research can determine any ecological changes. The science of water resource development needs such ecological research. The recommended project presents a superb opportunity for a cooperative environmental research program involving the Federal and State Governments, and University of Illinois. Staged filling of the Oakley pool and concurrent research would help minimize any irreversible or irretrievable committments of resources."	A. "The normal pattern of flooding at Allerton Park involves an average of 3.3 floods per year, mostly from January through June, each flood lasting about 5 days, and with a total inundation of 17 days per year. Any change in this pattern will set back the normal succession (if flooding is excessive) or accelerate the succession (if flooding is reduced). With any change produced in the normal flooding pattern, the Park can no longer be considered a natural area and it thereby loses much of its scientific value."
	"The Corps proposes that a scientific research program be funded to obtain ecological data on Allerton Park. There is no guarantee that such a program would be sufficiently funded or that information gained would be used by the Corps."
	"We are more immediately concerned as to the effect of the Reservoir on the natural area in Allerton Park. This natural area is unique, in fine condition, and has been recommended by this State Commission for inclusion in the Illinois State Nature Preserves System. It has also been recommended by the U.S. National Park Service as a National Natural Landmark...The natural characteristics of the area will be lost with the permanent water level in the Reservoir raised to 623' and the discharge lowered to 5000 cfs. This Commission opposes this plan..."

CORPS OF ENGINEERS IV. Allerton Park, cont.	COMMITTEE ON ALLERTON PARK IV. ALLERTON PARK, cont.
	"The depth, duration and frequency of artificial flooding in the Allerton bottomlands with a 5000 cfs flood discharge rate would be considerably greater than indicated by the February 20, 1970 report because of a Corps error in computation...Instead of artificial flooding less often than once in 15 years, as the Division of Waterways has reported to Governor Ogilvie, there would be greater than natural flooding about once every 4 years."
	"At elevation 623, the joint-use pool would extend upstream all the way through Allerton Park, though the water level will be below the top of the banks of the river. This means that there would be a standing pond rather than a flowing stream in the park, and that there would be a permanent rise of as much as 3 feet in the level of the underground water table in the bottomlands."

BLUEPRINT FOR A CITIZENS'ENVIRONMENTAL SURVEY

The Water Resources Council, a policy-making body in the Executive Branch of the Federal government, has recently completed a study of present water resource planning policy and has proposed sweeping changes. In its report, released by a Special Task Force in July 1970, the WRC advocated giving environmental considerations equal weight with three other issures (national economic development, regional development, and social well-being) in future planning for water resource development. The Task Force report (entitled Standards for Planning Water and Land Resources) described positive and negative environmental impacts of water resource development in terms of benefits and costs:

> Environmental quality benefits (of a project) are contributions resulting from the management, preservation, or restoration of one or more of the environmental characteristics of an area under study. . . Environmental costs...are consequences of the proposed plan that result in the deterioration of relevant environmental characteristics of an area under study or elsewhere in the Nation; for example, acres of open and green space, wilderness areas, estuaries, or wildlife habitat inundated or altered, or of lands experiencing increased erosion...
>
> (Standards for Planning Water and Land Resources, a Report to the Water Resources Council by the Special Task Force, July 1970, p. III-D-1.)

The WRC report goes on to suggest that, in measuring the environmental impact of a project, it is necessary to:

1. describe the existing environmental conditions;
2. predict the changes which will occur in these conditions under a variety of alternatives, including the alter-

native of doing nothing (since some changes will take place naturally over a period of time without a project);

3. measure the changes as they take place after adoption of one of the alternatives. This may be accomplished with:

   - qualitative descriptions of visible impacts
   - quantitative descriptions (e.g. fish and wildlife populations)
   - instrumentation measuring, and
   - systems analysis of data.

(Ibid, pp. III-D-2, III-D-3.)

Where do citizens fit into all this? One of the most valuable and effective tasks a citizens' group can undertake is the preparation of a detailed inventory of the region in which the group is active. Even when there is no Corps project being contemplated for the area, it is helpful to know the local ecological communities thoroughly and to make such data available to professional planners and private citizens. Only with a real understanding of the biology, geology, and history of land and water resources can wise decisions be made about the future use of these resources.

The Water Resources Council's report offers an outline for Federal agencies to follow in evaluating the potential impact of a plan upon the environment. By following this outline and modifying it to serve the special needs of a particular area, a citizens' group can reach its own assessment of existing environmental characteristics and possible changes in these characteristics for the future.

Excerpts from the WRC outline of environmental features can serve as a blueprint for a citizen survey of the area or region to be affected by a potential project.

A. Areas of natural beauty and aesthetic value

1. Open and green space

These are essentially undeveloped, visually attractive natural areas strategically located where most needed to ameliorate intensifying urbanization patterns.

a. Size and measure
    (1) Total acreage (woods, fields, meadows, etc.)
    (2) Pattern and distribution
    (3) Juxtaposition to community and urban areas (effect on urban sprawl)

b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the designated or affected open and green space

c. Improvements
    (1) Accessibility (mileage of public roads or trails provided; easements)
    (2) Public amenities (provision for limited facilities, if any)
    (3) Other (specify or describe)

d. Protection and preservation
    (1) Physical
    (2) Biological
    (3) Legal (dedication, easements, institutional,etc.)
    (4) Special

2. Wild and scenic rivers

These are free-flowing streams, with shorelines or watershed essentially or largely undeveloped, which possess outstandingly remarkable scenic, recreational, geological, fish and wildlife, historic, cultural, and other features.

- a. Size and measure, including characterization of adjacent primitive or near natural setting
  - (1) Total mileage
  - (2) White water mileage
  - (3) Water quality (generally characterize)
  - (4) Character and extent or acreage of streamside land
  - (5) Juxtaposition to communtiy
- b. A descriptive-qualitative interpretation, including evaluation of the effects of a plan on the designated or affected wild or scenic river
- c. Improvements
  - (1) Accessibility (trails, infrequent roads, or other minimum public access provided; easements)
  - (2) Public amenities (provision for limited facilities as boat launching, picnic areas, if any)
  - (3) Other (specify or describe)
- d. Protection and preservation
  - (1) Geological
  - (2) Biological
  - (3) Legal (dedication or withdrawal, institutional, pollution standards, etc.)

(4) Special

3. Lakes

Where their clarity, color, scenic setting, or other characteristics are of special interest, aesthetically pleasing lakes contribute to the quality of human experience.

a. Size and measure
   (1) Surface acreage
   (2) Shoreline mileage
   (3) Depths
   (4) Water quality

b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the designated or affected lake or lakes

c. Improvements
   (1) Accessibility (public roads and trails; easements)
   (2) Drainage
   (3) Cleaning
   (4) Shoreline management, including public amenities
   (5) Other (specify or describe)

d. Protection and preservation
   (1) Geological
   (2) Biological
   (3) Legal (institutional, pollution standards, etc.)
   (4) Special

4. Beaches and shores

The juxtaposition of attractive beaches, distinctive, scenic shorelines, and adjacent areas of clean offshore water provides positive public aesthetic values and recreational enjoyment.

- a. Size and measure
  - (1) Mileage
  - (2) Acreage
  - (3) Marshland acreage
  - (4) Embayments
- b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on designated or affected beaches and shores
- c. Improvements
  - (1) Accessibility (public roads and trails; easements)
  - (2) Public amenities
  - (3) Nourishment
  - (4) Other (specify or describe)
- d. Protection and preservation
  - (1) Physical (jettys, bulkheads, etc.)
  - (2) Biological (dune succession, limited use, etc.)
  - (3) Legal (dedication, institutional, etc.)
  - (4) Special

5. Mountains and wilderness areas, including lowlands

Generally occurring at higher altitudes, these pristine areas of natural splendor and scientific interest embrace a very special category of land use. Such areas are designated for the purpose of preserving primeval conditions, as nearly as possible, for aesthetic enjoyment and for limited forms of recreation and other scientific uses.

a. Size and measure
    (1) Acreage
    (2) Biological diversity
    (3) Pattern and distribution
b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the designated or affected mountain and wilderness area
c. Improvements
    (1) Accessibility (limited public roads and trails)
    (2) Public amenities (limited facilities provided, if any)
    (3) Other (specify or describe)
d. Protection and preservation
    (1) Geological
    (2) Biological
    (3) Legal (dedication, institutional, etc.)
    (4) Special

6. Estuaries

Beyond their critical importance in man's harvest of economically useful living marine resources, many estuaries, coves, and bays merit special consideration as visually attractive settings that support diverse life forms of aesthetic value and as marine ecosystems of special interest.

a. Size or measure
    (1) Surface acreage
    (2) Shoreline mileage
    (3) Marshland acreage and shoreline mileage
    (4) Water quality (generally characterize)

b. Biological significance as a nursery, breeding, and feeding ground (name species involved)

c. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the designated or affected estuary

d. Improvements
    (1) Accessibility
    (2) Public amenities (facilities provided, if any)
    (3) Other (specify or describe)

e. Protection and preservation
    (1) Geological
    (2) Biological
    (3) Legal
    (4) Special

7. Other areas of natural beauty

These include any other examples of nature's visual magnificance and scenic grandeur, not accommodated in the above-specified classes, which have special appeal to the aesthetic faculties of man.

a. Size or measure
    (1) Acreage
    (2) Mileage
b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan designated or affected areas of natural beauty
c. Improvements
    (1) Accessibility (public roads and trails; easements)
    (2) Screening
    (3) Plantings (seedlings, grassed cover, etc.)
    (4) Public amenities (scenic overlooks, if any)
    (5) Other (specify or describe)
d. Protection and preservation
    (1) Geological
    (2) Biological
    (3) Legal
    (4) Special

Conversely, and in a generally parallel manner, negative effects of a plan result from the inundation, adverse alteration, or decreases in the availability, use, and aesthetic quality of these resources.

Especially valuable archeological, historical, biological, and geological resources and selected ecological systems

1. Archeological resources

Preservation of these resources provides a continuing opportunity for studying the development of human settlements and understanding man's cultural heritage.

a. Size or measure
    (1) Acreage

- (2) Square footage
- (3) Height or depth from ground level

b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the designated or affected archeological resource areas

c. Educational
- (1) General education
- (2) Special and scientific

d. Improvements
- (1) Accessibility (public roads and trails; easements)
- (2) Interpretation and monumentation
- (3) Other (specify or describe)

e. Protection and preservation
- (1) Physical
- (2) Legal (dedication, other)
- (3) Special (salvage or full-scale excavation)

2. Historical resources

Preservation of these resources provides for the study, understanding, and appreciation of the Nation's origins-and the evolution of its institutions as well as its scientific and technical progress.

a. Size and measure
- (1) Acreage
- (2) Number of units (of whatever kind)

b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the designated or affected historical resource area

c. Educational values
- (1) General education

        (2) Specialize

    d. Improvements

        (1) Accessibility (public roads and trails; easements)

        (2) Availability (as appropriate to particular site or materials preserved)

        (3) Interpretation and monumentation

        (4) Other (specify or describe)

    e. Protection and preservation

        (1) Physical

        (2) Legal (dedication, other)

        (3) Special (Salvage or full-scale investigation)

3. Biological resources suitable for special study

The opportunity to observe and study biological resources--terrestrial and aquatic--leads to an enlarged understanding and appreciation of the natural world as the habitat of man.

    a. Size and measure (wide variation depending on characteristics of particular animal or plant)

        (1) Total land and surface acreage and shoreline mileage

            (a) Land acreage (forest, woodland, grassland, etc.)

            (b) Water surface acreage and shoreline mileage

            (c) Marshland acreage and shoreline mileage

        (2) Population estimates and characteristics of fish and wildlife to include as nearly as possible:

            (a) Age and size classes

            (b) Sex ratios

            (c) Distribution (density)

b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the designated or affected biological resources

c. Educational

   (1) General

   (2) Special and scientific

d. Improvements

   (1) Accessibility (public roads and trails; easements)

   (2) Habitat enhancement or site improvement

      (a) Sanitation

      (b) Stabilization

      (c) Increasing edges

      (d) Harvesting (to maintain balance with environmental food supply)

      (e) Cover planting (species, including number or acreage)

      (f) Stocking

         (1) Wildlife (species and number)

         (2) Fish (species and number)

   (3) Other (specify or describe)

e. Protection and preservation

   (1) Physical

   (2) Legal (dedication, other)

   (3) Special

4. Geological resources

When of outstanding geological or geomorphologic significance, preservation of these resources contributes to man's knowledge and appreciation of his physical environment.

a. Size and measure
   (1) Surface acreage
   (2) Subsurface acreage (estimated)
   (3) Quantity (estimated in appropriate units)

b. A descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the designated or affected geological resources

c. Educational
   (1) General education
   (2) Special and scientific

d. Improvements
   (1) Accessibility (public roads and trails; easements)
   (2) Interpretation and monumentation
   (3) Other (specify or describe)

e. Protection and preservation
   (1) Physical
   (2) Legal
   (3) Special

Conversely, and in a generally paralled manner, negative effects result from the inundation, deterioration, or disruption of like kinds of resources.

5. Ecological systems

Apart from the contributions which use of the natural resource base makes to man's basic needs for food, shelter, clothing, and employment opportunities, covered elsewhere, the environmental objective embraces the concept and appreciation of the values inherent in preservation of ecological systems per se.

Each natural area, such as a watershed, a vegetation and soil type, a tidal salt marsh, a lake, or a stream complex, represents an ecosystem, an interdependent physical and biotic environment that functions as a continuing dynamic unity, posessing not only intrinsic values but also contributing to the enrichment of the general quality of life in a variety of subtle ways. Conversely, when such natural areas are lost or otherwise diminished in size or quality, there are corresponding environmental costs borne by society.

Positive effects--benefits--resulting from preservation of ecological systems include:

1. The maintenance of a natural environment in a state of equilibrium as an intrinsic value to society;
2. The provision of the purest form of aesthetic contact with nature;
3. Contributions to the development, appreciation, and integration of a "land ethic" or environmental conscience as a part of man's culture; and
4. Scientific understanding derived from the preservation and study of natural ecological systems which contributes to the conservation of natural resources in general, the most important practical application of ecology.

Conversely, negative effects--or costs--are the reduction or loss of opportunity to society as a result of a plan.

C. The enhancement of selected quality aspects of water by control of pollution

Beneficial water quality effects of water resource projects will, in most instances, be reflected in monetary benefits to water users and will be recorded under the national economic development or regional development objectives. For example, increases in the Nation's output of goods and services from improvements in water quality will be accommodated under the national economic development objective.

There will be other water quality benefits, however, such as improvement of water quality to the degree that swimming may be permitted where such activity was previously a health hazard, or improvement in water quality to meet established State standards. However, instances such as these will be exceptional rather than normal.

Consistent with water quality standards established for the affected planning area, positive water quality control effects, or benefits, are identified, measured, and described by:

1. Physical-chemical tests
    a. Which determine tha amount of oxygen present in representative samples

    b. The amount of oxygen that can be consumed by the oxidizable materials present
    c. Measures of salinity
    d. Temperature change
2. Specific indicators
    a. By the presence and count of specific indicator organism, such as coliform bacteria, algae, etc.
3. Description
    a. By a descriptive-qualitative interpretation, including an evaluation of the effects of a plan on the aquatic community as a whole

Conversely, negative effects--or costs--will be reflected as departures from the established water quality standards, including related damages, as a result of a plan.

Suggested Reading

Chapter 3

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CHAPTER IV

The Corps and Our Environment: Regulatory Functions

Although the public works projects constructed by the Army Corps of Engineers have an undeniable effect upon the environment and often attract considerable public attention for that reason, the Corps' greatest potential impact upon the environment--good or bad--may lie elsewhere. The Corps possesses statutory authority going back to the late 19th century to regulate the activities of private parties on the waterways of the nation. Specifically, the Corps may grant or deny permits to private industries and property owners for discharging wastes into waterways, or for dredging, filling, obstructing, altering or modifying the "course, location, condition, or capacity" of any navigable waterways or tributary of these waterways in the United States.

The exciting thing about the Corps' regulatory powers from the citizen's standpoint is the opportunity they afford for citizens to participate in enforcement of environmental standards and granting (or denying) of permits. Furthermore, the "Refuse Act," the 1899 statute dredged up (if you'll pardon the expression) with considerable glee by environmental activists, now serves as a basis for environmental litigation.

THE RIVERS AND HARBORS ACT OF 1899

The Refuse Act is not a complete legislative entity; rather it is a small, but significant section of the Rivers and Harbors

Act of 1899. Section 13 of that Act has come to be known as the Refuse Act, and it says:

> It shall not be lawful to throw, discharge, or deposit, or cause, suffer, or procure to be thrown, discharged, or deposited either from or out of any ship, barge, or other floating craft of any kind, or from the shore, wharf, manufacturing establishment, or mill of any kind, any refuse matter of any kind or description whatever other than that flowing from streets and sewers and passing therefrom in a liquid state, into any navigable water of the United States, or into any tributary of any navigable water from which the same shall float or be washed into such navigable water; and it shall not be lawful to deposit, or cause, suffer, or procure to be deposited, material of any kind in any place on the bank of any tributary of any navigable water where the same shall be liable to be washed into such navigable water either by ordinary or high tides, or by storms or floods, or otherwise, whereby navigation shall or may be impeded or obstructed...provided...that the Secretary of the Army, whenever in the judgment of the Chief of Engineers anchorage and navigation will not be injured thereby, may permit the deposit of any material above mentioned in navigable waters within limits to be defined and under conditions to be prescribed by him, provided application is made prior to depositing such material; and whenever any permit is so granted the conditions thereof shall be strictly complied with, and any violation thereof shall be unlawful. [33 USC 407, 30 Stat. 1152, March 22, 1899, (emphasis added)]

The Refuse Act has a companion piece in Section 10 of the 1899 Act, which established a permit requirement for activities other than dumping. Specifically, Section 10 says:

> The creation of any obstruction not affirmatively authorized by Congress, to the navigable capacity of any of the waters of the United States is prohibited; and it shall not be lawful to build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other navigable river, or other water of the United States, outside established harbor lines, or where no harbor lines have been established, except on plans recommended by the Chief of Engineers and authorized by the Secretary of the Army; and it shall not be lawful to

> excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of any port, roadstand, haven, harbor, canal, lake, harbor of refuse, or enclosure within the limits of any breakwater, or of the channel or any navigable water of the United States, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army prior to beginning the same. [33 USC 403, 30 Stat. 1151 March 22, 1899 (emphasis added)].

In case of violation, the two sections carry identical penalties of not more than $2,500 and not less than $500 for each violation, and imprisonment in the case of a "natural person" of not more than one year. Citizens can receive one-half of the fine assessed to all violators. The exact text of the 1899 law, relating to penalties, is as follows:

> Every person and every corporation that shall violate, or that shall knowingly aid, abet, authorize, or instigate a violation of the provisions of sections 407, 408, and 409 of this title shall be guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding $2,500 nor less than $500, or by imprisonment (in the case of a natural person) for not less than thirty days nor more than one year, or by both such fine and imprisonment, in the discretion of the court, one-half of said fine to be paid to the person or persons giving information which shall lead to conviction. [33 U.S.C. 411, 30 Stat. 1153, March 22, 1899 (emphasis added)].

Together, Sections 10 and 13 provide the Corps with a good deal of power. The law contains a two-pronged weapon: on one side, its intent is clearly to regulate altering and discharging wastes into our waterways through the issuance of permits; on the other side, it explains the procedures for prosecuting violators under the United States Criminal Code.

> The Department of Justice shall conduct the legal proceedings necessary to enforce the provisions of sections xxx 407, 408, 409 (and) 411, xxx of this title; and it shall be the duty of United States attorneys to

> vigorously prosecute all offenders against the same whenever requested to do so by the Army or by any of the officials hereinafter designated, and it shall furthermore be the duty of said United States attorneys to report to the Attorney General of the United States the action taken by him against offenders so reported, and a transcript of such reports shall be transmitted to the Secretary of the Army by the Attorney General; and for the better enforcement of the said provisions and to facilitate the detection and bringing to punishment of such offenders, the officers and agents of the United States in charge of river and harbor improvements, and the assistant engineers and inspectors employed under them by authority of the Secretary of the Army, and the United States collectors of customs and other revenue officers shall have power and authority to swear out process, and to arrest and take into custody, with or without process, any person or persons who may commit any of the acts or offenses prohibited by the said sections, or who may violate any of the provisions of the same: *Provided*, that no person shall be arrested without process for any offense not committed in the presence of some one of the aforesaid officials: *And provided further*, that whenever any arrest is made under such sections, the person so arrested shall be brought forthwith before a commissioner, judge, or court of the United States for examination of the offenses alleged against him; and such commissioner, judge, or court shall proceed in respect thereto as authorized by law in case of crimes against the United States. (33 U.S.C. 413, 30 Stat. 1153).

Historically, the Act has been used not to stimulate issuance or denial of permits, but rather to punish some (but by no means all) of those engaging in occasional activities detrimental to the water ways. Between 1899 and 1970, astonishingly enough, only about 400 permits were granted by the Corps for discharge outfalls under Section 10, and only 4 for actual discharges under Section 13! (The Corps has, by contrast, been issuing somewhere between 4,000 and 7,000 permits annually for dredging and filling.) Recent developments, spurred by a proposal from

President Nixon for a permit program, indicate that the future emphasis may be different.

Litigation Under the Refuse Act

Over the years since 1899, the strength of the Refuse Act has grown with judicial interpretation. Since the most significant decisions have been made since 1960, we focus on the recent period in our discussion.

In U.S. v Republic Steel Corp. (362 U.S. 482 (1960), the Supreme Court of the United States stated in an opinion written by Justice William O. Douglas that "sewage" was the only substance exempt from the prohibitions of Section 13 of the 1899 law. In this case, the Republic Steel Corporation and two other companies were enjoined from further dumping industrial wastes (consisting of solids suspended in the water) into the Calumet River in Illinois and were also ordered to dredge the river of all wastes already dumped, in order to restore the river to a navigable depth of 21 feet. (The wastes which had accumulated in the Calumet over a period of years had reduced the river depth to 17 feet in some places and 12 feet in others. Consequently, the build-up was considered to be an "obstruction" under Section 10 of the 1899 law). The Court quoted the late Justice Oliver Wendell Holmes who said, "A river is more than an amenity, it is a treasure," and warned against giving the Act a "narrow, cramped reading."

A 1966 case, U.S. v Standard Oil Co., held that "refuse matter" did not mean merely worthless, useless matter. The Supreme Court reversed the decision of the District Court for the Middle District of Florida, which had held that commercially valuable 100-octane aviation gasoline dumped by Standard Oil into the St. Johns River did not come under the designation "refuse matter." In this case Justice Douglas wrote, "Oil is oil and whether usable or not by industrial standards it has the same deleterious effect on waterways. . .There is nothing more deserving of the label 'refuse' than oil spilled into a river."

The following year, the U.S. Court of Appeals for the Third Circuit held in U.S. v Esso Standard Oil Co. of Puerto Rico that diesel oil spilled on the ground and carried by gravity to the sea was a criminal offense according to the second clause of Section 13 of the 1899 law, even though the oil spill did not create a clear impediment to navigation.

A 1969 U.S. District Court case dealt with the matter of procedure under the Refuse Act. The Interlake Steel Corporation, charged in U.S. v Interlake Steel Corporation with dumping iron particles and "an oily substance" into the Little Calumet River in Illinois, moved for dismissal of charges because the information leading to prosecution by the U.S. Attorney was supplied by the Coast Guard, which was not designated by the 1899 law as a supplier of such information. The District Court denied the motion and stated that information leading to prosecution under the Refuse Act does not have to be supplied by the Corps of Engineers or the Secretary of the Army, although they were specifically mentioned in the Act. Even more significant, the Court contended that the Water Quality Act of 1965, which called for setting regional water quality standards, did not relax any provisions of the 1899 law. Finally, the Court said that dumping prohibited waste into navigable waters does not have to be done "willfully, intentionally, knowingly, or negligently" to justify a conviction. This decision disallowed Interlake's defense of accidental error and marked a break with the usual policy of non-prosecution for small accidental spills followed by the Corps of Engineers.

A recent case in the U.S. Court of Appeals, 5th Circuit, added environmental teeth to Section 10 of the 1899 law. In that case, Zabel v Tabb, two landowners sued the Corps District Engineer, Col. R.P. Tabb, to compel him to grant them a permit to dredge and fill their property (which lay under the Boc Ciega Bay in Florida) in order to build a trailer park. Although the plaintiff succeeded at the District Court level, Col. Tabb appealed and obtained a reversal in the higher court. In that decision, the Court said that a permit for a landfill could be denied on ecological grounds alone, even though the proposed fill would not interfere with navigation. The National Environmental Policy Act of 1969, The Fish and Wildlife Coordination Act, and the 1899 Rivers and Harbors Act were all cited in the decision.

CASE (WITH CITATION)	DISPUTE UNDER LITIGATION	DECISION	SIGNIFICANCE
U.S. v. Republic Steel Corp. (362 U.S. 432(1960).	Republic Steel Corp. and 2 other companies dumping wastes (solids) in suspension into the Calumet River over a period of years, reducing the river depth to 17 feet in some areas and 12 feet in others	U.S. Supreme Court in opinion by Justice William O. Douglas said: 1) Only "sewage" exempt under Section 13 ("Refuse Act") 2) Companies enjoined from further dumping under Section 10, on theory that build-up of wastes constituted an "obstruction" to navigation. 3) Companies required to remove wastes from river and restore navigable depth of 21 feet.	1) Clear statement that liquids with solids in suspension are not exempt unless they are "sewage," i.e., human wastes. 2) First use of injunction under Section 10, and definition of "obstruction" as not necessarily structural. 3) Douglas' use of quotation from Oliver Wendell Holmes ("A river is more than an amenity, it is a treasure.) and warning against giving the 1899 Act a "narrow cramped reading." This section of opinion has been cited in several subsequent cases.

CASE (WITH CITATION)	DISPUTE UNDER LITIGATION	DECISION	SIGNIFICANCE
U.S. v. Interlake Steel Corp. 297 F. Supp. 912 (1969)	Interlake dumped iron particles and "oily substance" into little Calumet River in Illinois. Information leading to prosecution supplied by the Coast Guard.	U.S.District Court for Ill.: Motion to dismiss denied because Court said information does not have to come from Corps of Engineers. Court also said Water Quality Act of 1965 didn't inhibit enforcement of Refuse Act. Defense of accidental spill not valid.	1) Information on violation can be supplied to U.S. Attorney by anyone. 2) Refuse Act in no way weakened by passage of 1965 Water Quality Act. 3) Spills don't have to be made "willfully, intentionally, knowingly, or negligently" to be prosecuted.
Zabel v. Tabb, 430, F. 2d 199 (1970).	Landowners sued Corps' District Engineer to compel him to grant permit to dredge and fill in navigable waters to build trailer park.	U.S. Court of Appeals, 5th Circuit: Corps, under mandate of National Environmental Policy Act of 1969 and Fish and Wildlife Coordination Act, could deny permit even where no interference with navigation, flood control, or power production anticipated.	Ecological factors alone are adequate grounds for denying permit required under Section 10 of Rivers and Harbor Act of 1899.

CASE (WITH CITATION)	DISPUTE UNDER LITIGATION	DECISION	SIGNIFICANCE
U.S. v. Standard Oil Co., 384, U.S. 224 (1966).	Accidental spill of aviation gasoline into St. Johns River in Florida	U.S. Supreme Court: The gasoline in question did, indeed, qualify as "refuse" despite the fact that it had commercial value at the time it was dumped. Standard Oil convicted.	"Refuse" not limited to worthless matter thrown away. List of "refuse" is its effect on the waterway Douglas wrote, "Oil is oil, and whether usable or not by industrial standards it has the same deteterious effect on waterways...There is nothing more deserving of the label 'refuse' than oil spilled into a river."
U.S. v. Esso Standard Oil Co. of Puerto Rico (375 F. 2d 621 (1967).	Diesel oil spilled on the ground and carried by gravity into the sea.	U.S. Court of Appeals for Third Circuit: Spill unlawful under second clause of Section 13, outlawing dumping "on the bank of any navigable water...when the same shall be liable to be washed into such navigable water..."	Conviction can be obtained even though no clear impediment to navigation created by the spill.

PRIVATE CITIZENS AND THE REFUSE ACT

As noted earlier, the Refuse Act and its companion, Section 10 of the 1899 Rivers and Harbors Act, call upon the U.S. Attorney to "vigorously prosecute all offenders" and to pay half the fine to "the person or persons giving information which shall lead to conviction." This means that local environmental groups have a unique opportunity to be watchdogs over the waterways in their immediate area and to take action against any polluters. By providing information to the United States Attorney regarding violators of the Refuse Act, citizens can not only do their part to initiate legal action, but they may also gain a monetary reward in the process. What is more, an old legal arrangement known as qui tam permits citizens to sue the violator directly for their portion of the fine if the government fails to take action.

Citizens bringing action under the Refuse Act should begin by determining whether the apparent violator has a permit to dump refuse into the waterway or otherwise to "alter or modify" the waterway. If there is no permit, or if it appears that the terms of the permit may be violated, citizens should submit the following information in writing, duly notarized, to the United States Attorney:

1. The nature of the refuse material discharged.
2. The source and method of discharge.
3. The location, name, and address of the company, person, or persons causing or contributing to the discharge.
4. The name of the waterway into which the discharge occurred.

5. Each date on which the discharge occurred.
6. The names and addresses of all persons known to the citizen, including himself, who saw or knows about the discharges and could testify about them if necessary.
7. A statement that the discharge is not authorized by Corps permit. If a permit was granted, the statement should set forth facts showing that the alleged violator is not complying with one or more of the conditions of the permit.
8. The navigability of the waterway at the area of discharge. If the waterway into which the discharge occurred is not commonly known as "navigable," or is a tributary to a navigable waterway, the statement should set forth facts to show its status as a navigable waterway or tributary thereof.

Written statements should be augmented by photographs and samples of the substance discharged whenever possible. The United States Attorney may be reminded by citizens that, in addition to conviction and penalties, the government may seek injunctions under the Refuse Act, to compel violators to:

1. Preclude future discharges.
2. Remove material already discharged.
3. Apply for a permit from the Corps of Engineers unless he promptly ceases all dumping.

After the citizen has provided the above information to the U.S. Attorney, he is entitled to receive his share of the fine upon conviction of the polluter. However, if the government fails to prosecute the alleged violator, the citizen can file his own qui tam suit. "Qui tam" comes from the Latin "qui tam pro domino rege quam pro se ipso sequitur," meaning "who brings the action as well for the king as for himself". (A qui tam suit is one initiated by a private citizen in behalf of the government(which has the statutory power to prosecute) as well as for himself(when he has a statutory right to part of the fine). Qui tam is an accepted legal practice going back to 14th century England. Until the 19th century, enforcement of misdemeanor charges having to do with such personal misdeeds as drunkenness, indebtedness, adultery, and the like depend almost exclusively on informers, who were given a portion of the fine. Even today, customs and income tax laws are enforced mainly through the use of paid informers. While there may be problems regarding interference with privacy and civil liberties in such cases, one could hardly complain of that in a case involving the dumping of wastes into a river.

The issue of qui tam suits in the environmental area has not yet been resolved. During 1970 about half a dozen qui tam suits were filed under the Refuse Act, and while most of them are still pending, adverse decisions were made in early 1971 by District Courts in Wisconsin, Texas, and Washington State. The Wisconsin case was brought by Congressman Henry Reuss, a long-time environmentalist, against the Peter Cooper Cooporation and the Moss-American Company. Despite Congressman Reuss' contention that he had reported Refuse Act violations to the Department of Justice, and that Justice had failed to prosecute, the District Court ruled that private citizens did not have the right to sue for their share of the fine. (Reuss v. Moss-American, Inc. Suits 70-C-485 and 70-C-486, Eastern Dist. Wisconsin, February 23, 1971).

In the Washington case, the District Court ruled in a very brief opinion that attorney Martin Durning did not have standing to sue I.T.T. -Rainier under the Refuse Act. (Civil Suit 9670, Western District, Washington, October 6, 1970). That case is presently under appeal before the U.S. Court of Appeals, Ninth Circuit.

Phineas Indritz, Chief Counsel of the Conservation and Natural Resources Subcommittee of the House Committee on Government Operations, has suggested that citizens still have recourse even if the government fails to prosecute and the courts continue to hold that citizens do not have qui tam rights under the Refuse Act. Recent decisions giving citizens standing to sue for protection of the environment, Mr. Indritz says, make it possible for citizens to seek injunctions under the Refuse Act on a theory of damages. That theory holds that any criminal statue which is established to protect a group of people (as the Refuse Act was intended to protect all the people from pollution) gives that group the right to expect such protection. When it is not forthcoming from the Federal government, the people may sue for damages. Thus a citizens' group seeking to go to court for clean water using the Refuse Act as the basis for their case may try any one of the three avenues we have discussed: 1) providing information to the U.S. Attorney to encourage the government to prosecute; 2) filing a qui tam suit; 3) filing suit to recover damages. The latter two alternatives are suited to groups with an appreciation for innovative legal action and a budget sufficient to cover court costs if the case fails on its merits.

The House Conservation and Natural Resources Subcommittee has published a booklet called *Qui Tam Actions and the 1899 Refuse Act: Citizen Lawsuits Against Polluters of the Nation's Waterways*. It explains the precedents and possibilities for litigation under the Refuse Act in greater detail. It is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, price 20¢.

SUBSEQUENT LEGISLATION

The Refuse Act has been augmented, but not superseded, by several important pieces of environmental legislation. Later laws have made it clear that the Corps has the authority to deny permits or to prosecute under the Refuse Act when a discharging of wastes or any other action affecting the waterways would have a detrimental effect upon the environment, even where there is no impediment with anchorage or navigation.

The Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act as amended in 1958 (72 Stat. 563, P.L. 85-624, 16 U.S.C. 661) requires the Corps to consider the effect of its water resource projects on fish and wildlife. The law also requires the Corps to consult with the Fish and Wildlife Service when considering applications for permits under the 1899 law, both Section 10 and Section 13 (the Refuse Act). The Fish and Wildlife Act states a general policy of:

> ...recognizing the vital contribution of our wildlife resources to the Nation, the increasing public interest and significance thereof due to expansion of our national economy and other factors, *and to provide that wildlife conservation shall receive equal consideration and be coordinated with other features of water-resource development programs* . . . (emphasis added)

To assure that wildlife is given the consideration and protection the law advocates, Section 2(a) of the Act states that:

> ...whenever the waters of any stream or other body of water are proposed...to be impounded, diverted, the channel deepened, or...otherwise controlled or modified for any purpose whatever ...by any public or private agency under Federal permit or license...such...agency first shall consult with the United States Fish and Wildlife Service, Department of the Interior...with a view to the conservation of wildlife resources by preventing loss or damage to such resources... (emphasis added)

While the dredging, filling, obstructing and otherwise altering of the waterways mentioned in Section 10 of the 1899 law are most clearly covered in the requirements of the Fish and Wildlife Coordination Act, the dumping of refuse can also be considered covered under the section which reads "otherwise controlled or modified for any purpose whatever," since discharged wastes definitely modify the quality of the water. Indeed, the Corps generally does consult the Office of Fish and Wildlife before granting permits. However, the law does not explicitly require that the Corps accept the advice of Fish and Wildlife. In one infamous case, the permit for Hunting Creek landfill in Alexandria, Virginia, certain high officials within the Interior Department ignored the warnings of the Fish and Wildlife Service staff about the adverse effect the landfill would have on wildlife. These officials later cited political pressures as the reason for Interior 's recommendation that the Corps grant the permit to two private developers. That case seems to have been a classic example of political gamesmanship and internal arguments within Interior. A subsequent investigation by the House Committee on Government Operations and a citizen lawsuit against the State of Virginia, brought about a revocation of the permit. The Congressional committee considered the question of how much weight the Corps should give to Fish and Wildlife reports. Clearly, the intent of the law is not merely to require that such surveys be made on a *pro forma* basis, but to assure that the reports actually contribute to the preservation of fish and wildlife. Otherwise, it is hard to explain the language of the law, which says the Corps' consultation with the Office of Fish and Wildlife should be made "with a view to the conservation of wildlife resources by preventing loss or damage to such resources . . ."

The Hunting Creek case is a good case study for citizens. We suggest that interested people obtain copies of the report of the Committee on Government Operations, *The Permit for Landfill in Hunting Creek: A Debacle in Conservation*, published as House Report 91-113, March 24,1969. It may be obtained from any Congressman or from the committee office. The Hunting Creek case is also analyzed with great insight in Joseph L. Sax's book, *Defending the Environment*, N.Y., Alfred A. Knopf, 1971 and Professor Sax's article in the February 1971 issue of *Esquire* magazine, entitled "Little Sturm und Drang at Hunting Creek."

Water Quality Act of 1965 and Water Quality Improvement Act of 1970

The Water Quality Act of 1965 (79 Stat. 903. P.L. 89-234. 33 U.S.C. 466) established the Federal Water Pollution Control Administration (now the Federal Water Quality Office of the Environmental Protection Agency) and gave the states a certain period of time in which to establish water quality standards and require private users of the waterways to comply with these standards. As a District Court stated in U.S. v. Interlake Steel Corporation (1969), the Water Quality Act in no way relaxed the provisions of the Refuse Act.

The states have been given further power by the Water Quality Improvement Act of 1970 (84 Stat. 91, P.L. 91-224) which requires that applicants for Corps permits receive certification from their states (or the appropriate interstate water quality agency) as proof of their compliance with state water quality standards. Under the terms of the 1970 law, the Corps may not grant permits for discharges which have not been properly certified by the state or interstate agency. When a permit is granted, the facility must be inspected by the state before discharging begins. The permit may be suspended whenever the facility is found to be in violation of current standards because of 1) changes in the facility itself; 2) changes in the characteristics of the water into which the discharge is made; or 3) changes in the applicable water quality standards.

1967 Memorandum of Understanding

In 1967, the Secretary of the Army and the Secretary of the Interior reached a Memorandum of Understanding regarding their mutual responsibilities under the Rivers and Harbors Act of 1899. Although the 1967 Memorandum lacks the force of law, it is nonetheless official policy of the two Departments. Th

Memorandum was executed

> In recognition of the responsibilities of the Secretary of the Army under sections 10 and 13 of the act of March 3, 1899. . . relating to the control of dredging, filling, and excavation in the navigable waters of the United States,

> and the control of refuse in such waters, and the interrelationship of those responsibilities with the responsibilities of the Secretary of the Interior under the Federal Water Pollution Control Act. . .the Fish and Wildlife Act of 1956. . .relating to the control and prevention of water pollution in such waters and the conservation of the Nation's natural resources and related environment, including fish and wildlife and recreational values therein. . .

The Memorandum of Understanding established procedures to be followed in cases of joint responsibility for regulation of the waterways:

1. When the Corps receives a permit application, it must send notice to "all interested parties", including the Federal Water Quality Office, the U.S. Fish and Wildlife Service, the National Park Service, and the appropriate state agencies.

2. The regional director of the Department of the Interior must then make the appropriate studies and advise the Corps' District Engineer whether the action under consideration for a permit would violate water quality standards or "unreasonably impair natural resources or the related environment".

3. The District Engineer must hold public hearings on permit applications whenever it appears that "hearings are desirable to afford all interested parties full opportunity to be heard on objections raised".

4. When the reports from the Interior Department indicate that a proposed action will violate water quality standards or impair the environment, the District Engineer

must encourage the applicant to make the necessary changes to remedy the problems. Failing that, the District Engineer must pass the matter along to the Chief of Engineers for a decision.

5. The Chief of Engineers will make a final consultation with the Under Secretary of the Interior on cases with unresolved problems or controversies.

6. When the matter remains unresolved after consultation between the Chief of Engineers and the Under Secretary of the Interior, the final decision will rest with the Secretary of the Army, in consultation with the Secretary of the Interior.

National Environmental Policy Act of 1969

As we noted in the last chapter, Section 102 of the National Environmental Policy Act of 1969 (83 Stat. 853, P.L. 91-190) requires that detailed statements of environmental impact be prepared to accompany "every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment". The problem, in terms of the corps' permit power, is to determine whether each and every permit application constitutes a "major Federal action" and therefore requires a 102 statement. If the Corps establishes a program to force all parties discharging refuse into the waterways to obtain permits, then the preparation and review of 102 statements to accompany all applications would be a cumbersome process, to say the least. It seems clear that the line must be drawn somewhere. Citizens may wish to exert pressure on the Corps to issue 102 statements to accompany permit applications when the environmental impact of the proposed activity would be widespread, perhaps crossing state lines. The Corps current policy concerning environmental statements in permit cases is described in a new Corps pamphlet for permit applicants:

> Section 102 (2) (C) statements will not be required in permit cases where it is likely that the proposed discharge will not have any significant impact on the human environment. Moreover, the Council on Environmental Quality has advised that such statements will not be required where the only impact of proposed discharge or deposit will be on water quality and related water quality considerations because these matters are specifically addressed under sections 21(b) and (c), the Federal Water Pollution Control Act, as amended. However, such statements shall be required in connection with proposed discharges or deposits which may have a significant environmental impact unrelated to water quality. In cases in which a Section 102(2)(C) statement may be required, the report of the District Engineer accompanying any case referred to higher authority will contain a separate section addressing the environmental impact of the proposed discharge or deposit, if any, and, if issuance of a permit is recommended, a draft Section 102(2)(C) statement should be attached. In all other cases in which a Section 102(2)(C) statement is required the District Engineer shall draft, consult with, and obtain the comments of any Federal, State and local agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. In cases where the preparation of a Section 102 (2)(C) statement is necessary, the District Engineer may require the applicant to furnish such information as he may consider necessary to prepare the required statement. (From draft of Corps pamphlet, "Permits for Discharges or Deposits into Navigable Waters or Tributaries Thereof; pp. 32-33.)

JUSTICE DEPARTMENT POLICY AND THE REFUSE ACT

In June, 1970, the Justice Department announced that it would not initiate legal action against violators of the

Refuse Act if the violators are engaged in any sort of pollution abatement program under the Federal Water Pollution Control Act. While this may seem fair for the polluter, it has been widely viewed as a serious dent in the power of the Refuse Act. The abatement proceedings spelled out by the Federal Water Pollution Control Act are very long and drawn-out, consisting mainly of conferences between the violating parties and federal officials aimed at arriving at a schedule for improving the polluter's practices. In the case of hazardous substances or serious threats to the very life of the waterways, more immediate action is needed. Indeed, even the Justice Department apparently found its guidelines too lax, for it initiated Refuse Act prosecution against several companies in August, 1970, for discharging mercury into the nation's rivers. Environmental activists are in general agreement about the value of the language of the Refuse Act, which requires the U.S. Attorney to "vigorously prosecute all offenders", and question whether the Justice Department's policy is a violation of that mandate. Interlake Steel would seem to support that conclusion, since the Court's opinion in that case said specifically that the Federal Water Pollution Control Act in no way weakened the provision of the Refuse Act.

The Justice Department issued new guidelines in early 1971. These guidelines will be discussed in detail later in the chapter along with the permit program proposed by President Nixon in Executive Order 11574 (December 23, 1970). The new guidelines do not state specifically whether the policy of non-prosecution will continue, but there are suggestions that it will.

A NEW PERMIT PROGRAM UNDER THE REFUSE ACT

Noting that only a minute percentage of the estimated 40,000 to 100,000 industries (and others) who dump refuse into the nation's streams and rivers have obtained permits for their activities, President Nixon proposed on December 23, 1970, that the Corps of Engineers begin a serious effort to force universal compliance with the permit requirements of the Refuse Act. In Executive Order 11574, he directed the Corps to participate in a permit program in cooperation with the Environmental Protection Agency as well as other Federal agencies and the state water quality agencies. In the proposed permit program, the permit applicants will be required to obtain certification from their state water quality agency as proof of their compliance with the state's water quality standards. These standards, it will be remembered, were established under the Federal Water Pollution Control Act of 1965. Their strength varies from state to state.

The Environmental Protection Agency has been directed to review the state certification of each applicant, in the appropriate EPA regional office, which will then advise the District Office of the Corps as to its recommendation for granting or denying a permit on water quality grounds. The Corps of Engineers must accept the recommendation of the Environmental Protection Agency in the water quality aspects of a permit application, but it may make its own decision on the navigational aspects. It may also make a final decision on matters pertaining to the preservation of fish and wildlife, although of course the terms of the

Fish and Wildlife Coordination Act and the 1967 Memorandum of Understanding require a consultation with the Interior Department in measuring effects of a proposed action on fish and wildlife. The National Oceanic and Atmospheric Administration (NOAA), a part of the Commerce Department, may also be consulted on environmental questions outside the water quality area. The Corps will have administrative responsibility for the program.

The permit program, as proposed by the President and incorporated into new regulations within the Corps of Engineers, will require applicants for permits under the Refuse Act to meet the following conditions:

1. Compliance with state water quality standards.
2. Agreement to comply with any changes in water quality standards after the granting of the permit.
3. Compliance with conditions established by the Federal Water Pollution Control Act of 1965:
    a. A periodic demonstration of continuing compliance.
    b. Periodic sampling of discharges.
    c. Periodic reports on the nature and quantity of discharges

The permits would be issued by the District Engineer of the Corps, but the Regional Representative of the Environmental Protection Agency would be empowered to advise the District Engineer as to the recommended duration of the permit, taking into account the nature of the discharge, the plans for the river basin, and changes in the technology of water treatment.

Once granted, the permit could be suspended or revoked under the following circumstances:

1. A serious violation of the conditions of the permit.
2. A discovery that the substance being discharged is hazardous to public health and safety.

The Justice Department has written new guidelines for litigation under the Refuse Act, to tie in with the permit program. The guidelines state that United States Attorneys may initiate legal action on complaints of violations of the Refuse Act received from either the District Engineer of the Corps or the Regional Representative of the Environmental Protection Agency. Complaints from other sources, such as private citizens, will be referred to the District Engineer and the Regional Representative of the Environmental Protection Agency for a decision as to whether legal action is required. It would appear that the Justice Department foresees less reliance on litigation, since the denial, suspension, or revocation of a permit would be a preferable means for regulating the discharging of wastes into the rivers.

Nearly everyone agrees that a broad permit program is an excellent idea and is clearly within the intentions of the 1899 law. Many environmentalists are, however, critical of certain aspects of the program as presently planned.

For example, the Corps' regulations state that permit applications for existing discharges must be filed by July 1, 1971, but prior legislative mandates do not require facilities which were built or under construction prior to 1970 to obtain state certification of water quality until 1973. Since state certification is the first requirement for granting a permit, this means that most applications will drag out for well over two years. In the meanwhile, the industries involved will continue to pollute our waterways, and it is most unlikely that the Justice Department or the courts would even consider a suit against the polluters while a permit application is pending.

Applications for new discharges must be filed at least 120 days before the discharges can be started. A check with the Corps' New England Division (which has no District Officers under it) in mid-June, 1971, revealed that 1,548 applications for permits in New England had been received under the new program.

Problems of public disclosure are causing the greatest concern among environmentalists, Plans for the permit program do not state at what point the applications for permits, or the state water quality judgments, are to be made public. At present, citizens need only find out from the Corps' District Engineer whether an alleged violator has a permit before they begin legal action. During the application process, which may drag out for well over a year, it may be impossible to find out the status of the application. Citizens may need to contact not only the District Office of the Corps, but also the state water quality agency, the EPA regional office, the EPA and the Corps in Washington before they can determine how a polluter is complying with the law. Even after a permit is granted, citizens may not be able to tell whether discharges being made into a river are in violation with the terms of the permit.

The permit program, if carefully thought out, can be a powerful weapon against the polluters of our waterways. But unless the program ensures strict requirements and strict enforcement, the permits granted under the Refuse Act may turn out to be "licenses to pollute," as some critics have suggested. Citizens will want to watch carefully as this new approach is enacted.

In June, 1971, the Corps published its official pamphlet for use by all permit applicants. The pamphlet is divided into three Parts; Part I is to assist applicants in applying for authority to perform work or place structures in or across navigable waters, Part II is to help in applying for permits to discharge or deposit materials into navigable waters and tributaries thereof, Part III contains a copy of the Corps application form (ENG FORM 4345) with instructions as to its preparation and the information required to be submitted by the applicant. The pamphlet also discusses the relevant laws and how they pertain to the Corps permit authority.

Citizens interested in permit cases may obtain the pamphlet from the nearest District Office of the Corps of Engineers. It is a valuable tool for understanding the permit authority and the application procedure.

CHAPTER V

The Dollars and Sense of Corps Projects

Nearly everybody believes that environmental factors should be considered in the evaluation of Army Corps projects. The consensus disappears, however, at the first sight of the dollar sign. Such elusive factors as the effects of projects on fish and wildlife, anticipated population growth, future recreational potential and demand, future land values, and aesthetics, when assigned monetary figures and counted among the benefits and costs of a Corps project tend to bring disagreements. For example, how can one analyze the cost of destroying a waterfowl nesting area?

It is very important for the concerned citizens' group to understand the economic evaluation process applied by the Corps to its projects so that the group can make its own analysis and compare its figures with those supplied by the Corps. We have emphasized the importance of accuracy and expertise in citizens' analyses of Corps of Engineers projects. Nowhere is this more important than in the economic area. If an environmental group can add to its general arguments for resource conservation the additional strength of sound economic analysis, the chances for success in affecting project outcomes are considerably greater. Some of the basic tools and information needed for making an economic analysis are included in this chapter. The professional economist will, of course, need to obtain more detailed information prior to making a formal project economic analysis. The chapter is intended to serve as a general introduction for the layman.

BENEFIT-COST ANALYSIS

The Army Corps of Engineers has been using the benefit-cost analysis system to determine the economic feasibility of Federal Water resource projects since 1936, when the Flood Control Act was passed by Congress. Section One of the Act (U.S.C. 33, 49 stat. 1570, June 22, 1936) required that:

> . . .the Federal government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs. . .

This type of analysis is basically a comparison between annual estimated dollar benefits and annual dollar costs of a proposed project. The sum of all the benefits is divided by the sum of all costs to obtain the benefit-cost (b/c) ratio. A project is not considered economically feasible unless its b/c ratio is at least 1:1, that is, the project must provide at least one dollar's worth of benefits for every dollar spent. The Corps of Engineers computes the b/c ratio of a proposed project as part of its planning procedure. The Office of Management and Budget reviews the Corps' data and conclusions several times during project planning. The b/c ratio is a creature of change, however; it changes many times during the planning phase, and even during construction of a project. Citizens will need to keep a careful eye on the b/c ratio and analyze any fluctuations to determine what changes in the project or the conditions surrounding it have brought about the variation.

It is essential, if the b/c ratio is to have any meaning, that all benefits and costs be isolated and evaluated carefully. Dr. Barry Field, who did an independent economic evaluation of the proposed Logan Dam Reservoir Project in Ohio and in it disagreed sharply with many aspects of the Corps' economic analysis, pointed out that "a precondition to any benefit-cost study is a complete specification of the project in physical terms." In other words, before benefits and costs can be computed, it must be made perfectly clear just what the project will entail, in terms of both physical resources consumed and natural consequences.

The President's Water Resources Council is the executive branch entity which sets forth regulations and guidelines for planning and evaluating water resouree projects. Established by the Water Resources Planning Act of 1965, the Council consists of the Secretaries of Interior, Agriculture, Transportation, Army, and Health, Education and Welfare, the Chairman of the Federal Power Commission and the Director of the Environmental Protection Agency. An *ad hoc* interagency commission preceding the Council provided guidelines for determining the economic feasibility of a project in a document entitled *Policies, Standards, and Procedures in the Formulation, Evaluation, and Review of Plans for Use and Development of Water and Related Land Resources*, published as Senate Document 97. It was adopted as an official administrative regulation by the President on May 29, 1962. The guidelines remain in effect at this writing, although new proposals have been prepared by the Water Resources Council. The possible changes will be discussed later in this chapter.

Senate Document 97, Section V (c) (2), states that a project is justified economically if the following conditions are met:

(a) Tangible benefits exceed project economic costs.

(b) Each separable unit or purpose provides benefits at least equal to its costs.

(c) The scope of development is such as to provide the maximum net benefits.

(d) There is no more economical means, evaluated on a comparable basis, of accomplishing the same purpose or purposes which would be precluded from development if the plan were undertaken. This limitation refers only to those alternative possibilities that would be physically or economically precluded if the project is undertaken.

It should be noted that these four conditions can justify an increase in the size of a proposed project. A smaller scale project might have a higher b/c ratio; that is, it would be more efficient in terms of dollars gained per dollar spent. But according to the rules laid out in Senate Document 97, the b/c ratio need not be maximized as long as it is at least 1:1. Net benefits, on the other hand, are to be increased to the highest possible level. By enlarging a project, the Corps may predict a greater net benefit even though the project may have a lower b/c ratio than if designed on a smaller scale.

BENEFITS:

Benefits are the favorable or desirable consequences of a project. Senate Document 97 defines benefits as "increases or gains, net of associated or induced costs, in the value of goods and services which result from conditions with the project, as compared with conditions without the project." Section V, (D) (1).

Tangible benefits are those which can be expressed in monetary terms derived from either their market value or comparison with the value of alternative means that would provide the same services.

Other benefits are described as being intangible when there are no ready means of measuring their value accurately in monetary terms, although they do have real value. Intangible benefits include such things as the protection of lives, national security, and an increased feeling of safety from natural hazards such as floods. Senate Document 97 points out that while intangible benefits cannot be fully evaluated in monetary terms or by formal analysis techniques, they usually contain a part which is readily measurable. The remaining part is to be evaluted on the basis of "informed judgment." Section V (D) (3).

In addition to the distinction between the tangible and intangible, benefits can be categorized in another way--between primary and secondary benefits. The former are defined as the net value of goods and services directly resulting from a project. For example, the amount of damage reduction resulting from a flood control project is a primary benefit of that project. Secondary benefits are the indirect benefits of a project such as increased profits to business and industry that develop on the flood plain after protection. However, secondary benefits are rarely claimed by the Corps except in Appalachia Region projects.

COSTS:

Costs are essentially the opposite of benefits and can also be broken down into two major types. Project economic costs are the sum of installation, operation, maintenance, and replacement costs. Project economic costs are usually the most explicit since they are determined by present construction costs, cost of labor and materials, and other "hard" figures, and are therefore easily quantified.

Induced costs are defined as all "uncompensated adverse effects caused by the construction and operation of a program or project." Section V (F) (4). Induced costs include such factors as the increased cost of government services (schools, roads, police) necessary for an area experiencing development as a result of a water project. Secondary costs and benefits have long been an area of controversy in analysis of public expenditure, largely because their inexact nature allows much room for debate about their true values.

Costs, like benefits, may be tangible or intangible. Tangible costs include all those costs that can have a monetary value put on them; project economic costs are a good example. Intangible costs, on the other hand, are dealt with differently. They include environmental deterioration resulting from a project or reduction in aesthetic value of an area. It is very difficult (and sometimes impossible) to apply a monetary value to these things, although it is generally accepted that they do have real value. For simplification, only tangible benefits and costs will be discussed in this chapter.

PROJECT PLANNING LIFE AND DISCOUNT RATE

Another basic concept to be considered by economists is the planning life of a project. This is the period of time over which a water resource project will serve a useful purpose. Senate Document 97 establishes 100 years as the maximum permissable planning time of a water resource project, stating that the period of time designated should be the shorter of either the physical or economic life of the project. Section V (G) (2). The 100-year maximum is used on large projects such as dams and canals, while shorter periods are used for small projects. The project planning life is used to compute the value of a project during its entire lifetime in terms of average annual benefits and costs. Basically, this is done by determining the present value (that is, at the beginning of the project life) of the cash flows occuring at different points in time during the life of the project. The reason for computing the present value can be recognized by noting, for example, that a dollar today is worth more than a dollar ten years from now, since it can be invested (at some interest rate) and after ten years will yield something more than a dollar. Similarly, a dollar ten years from now is worth something less than a dollar today. Therefore the value for each year simply cannot be added. The "present value" of a project is determined by using the "capital recovery factor." or the amount of principal and interest paid annually on a debt at the applicable interest rate.

The procedure for computing the present[1] value of a cost or benefit occuring at some future time involves the same kinds of standard formulas that are used in computing compound interest on savings in a bank. Each of these future values is determined by following the procedure of discounting. The process, in simplified terms, looks something like this:

A (present value for 1st year @ 5 1/8%*)
+B (A X present value for 2 years @ 5 1/8%)
+C (A X present value for 3 years @ 5 1/8%)
+D (A X present value for 4 years @ 5 1/8%)
+etc. for 100 years . . .

TOTAL BENEFITS

* (or whatever the current interest rate is)

For example, if we assume a present value of $1000, the average annual benefits would look something like this, leading to a computation of total benefits:

Present Value	$1000
Year 1	951
Year 2	905
Year 3	861
Year 4	819
Year 5	799
(etc. for 100 years)	

The same procedure is used for calculating average annual costs and total costs.

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[1] Once the present value has been established the Corps uses a "capital recovery factor" formula to put present values in terms of average annual values over the span of the projects economic life. The formula used is:

$$\frac{i(1 + i)^n}{(1 + i)^n - 1} = \text{Capital Recovery Factor}$$

Where i = current interest rate
n = economic life of project, i.e. 25, 50 or 100 years

It turns out that when using such formulas, an increase in the interest rate will increase average annual costs and decrease average annual benefits. The majority of costs of most water resource projects is incurred at the beginning of its economic life, particularly during construction. Conversely, most future items are benefits; therefore, a lower discount rate generally leads to a higher benefit-cost ratio.

It is interesting to note that, until 1962, the Corps used a 50-year period as the maximum planning life. The use of a 100-year economic life for a water resource project seems to be a rather extreme case of simplification when considering the variables involved. Implicit in the use of a century for the planning life is the belief that enough is known about all the variables to be able to look 100 years into the future. This is not possible, without careful consideration of risks and uncertainties. On the other hand, long-range planning is a necessity in the land-use and water resources area. What is emminently needed is method of evaluating the elements of risk and uncertainty. A commitment to a long-range plan is more likely to have unfortunate consequences (as a result of risk and uncertainty) than a short-range plan, and many economists think that discounting for a 50-year period is all that can possibly be justified for public water projects.

The new discount (interest) rate of 5 1/8 per cent (established July 1, 1970) was set by the Water Resources Council (WRC). The formula used was not the same as that in Senate Document 97, but was a new formula based on the "yield rate" which generally gives a higher discount rate. The rate proposed in the new WRC Special Task Force Standards is 5 1/2 per cent and the formula used is now officially part of the Corps procedures. The discount rate has been showing a steady upward trend over the years, though it is lagging somewhat behind the increases in private interest rates. Many economists advocate bringing the water resource rate into line with rates in the private sector to avoid the expenditure of Federal money on projects which could not be justified at private investment rates. Citizens often criticize the Corps' economic studies on specific projects for their utilization of an unreasonably low discount rate. This is particularly true when projects are not constructed until several years after their authorization. Inflation occurring in intervening years often renders a project infeasible economically, but by sticking to the interest rate used in the original benefit/cost computation at the time of authorization, the Corps can, in effect, ignore the effect of passing time.

Criticism about the low interest rate used in water resource planning has been leveled at the Water Resource Council, which sets the rate. The Office of Management and Budget has been critical even of the most recent increase, stating that it is insufficient. The Water Resource Council is comprised of the heads of the various agencies involved in water resource planning and construction, and some critics feel that the agencies which build water projects should be separated from the economic policy-making body concerned with those projects.

COST ALLOCATION

Once a project is found to be feasible, the next step is to determine how much money will be given to each purpose for which the project is to be built. The cost allocation process for a water resource project depends primarily on the purpose or purposes included in the project. For each purpose there are specific outlines for cost allocation.

Generally speaking, the Federal government bears the cost of flood control and navigation functions and shares with other parties (cost-sharing) the cost of recreation, power production, and water quality. Water supply is paid for by local interests.

The procedure used by the Corps for allocating total project costs to different purposes is the "separable costs-remaining benefits" (next page) method. The method is designed to distribute the costs of multi-purpose project equitably among the various project purposes, such as flood control, navigation, recreation, water supply, power production, and pollution abatement. To do this two things must be determined:

(1) The separable cost of including each function in the multi-purpose project;

(2) An equitable distribution of the costs for functions shared by the whole project and not attributable solely to a single purpose (residual or remaining joint costs).

The separable cost for each project purpose may be defined as "the difference between the cost of the multiple purpose project and the cost of the project with the purpose omitted." In other words, the separable cost for the flood control segment of a mutli-purpose project might be expressed as follows:

TOTAL PROJECT COST
- PROJECT COST WITHOUT FLOOD CONTROL
= SEPARABLE COST FOR FLOOD CONTROL

The residual or remaining joint costs are "the difference between the cost of the multiple-purpose project as a whole and the total of the separable costs for all project purposes." Residual costs could be computed as follows:

Separable Cost for Flood Control
Separable Cost for Navigation
Separable Cost for Recreation
Separable Cost for Water Supply
Separable Cost for Power Production
+ Separable Cost for Pollution Abatement
= Total of Separable Costs

Total Project Cost
- Total of Separable Costs
= Residual Costs

The residual costs are distributed among the project purposes in proportion to the benefits limited by alternative cost for that purpose; that is, the flood-control (or other purpose) benefits limited by the most economical way of achieving the same flood control aims in a single-purpose project. Thus, we might allocate residual costs for each purpose in the following hypothetical case:

> The hypothetical project is a dam, to be designed for flood control, power production, irrigation, and navigation purposes. The flood control costs are to be borne by the Federal government, while the power costs are to be shared with local interests and irrigation costs are to be handled locally. The total cost of the project is $1,767,000, and the method we have just described is used to compute each party's share of the total. Flood control, it is determined, accounts for 3% of the allocated residual cost, while power accounts for 62%, irrigation 30%, and navigation 5%. The following table illustrates the computations for each item and the final determination of cost allocation.

Once costs are allocated for each purpose, the established guidelines for cost-sharing between federal and non-federal interests can then be applied.

ALLOCATION OF COSTS BY SEPARABLE COSTS - REMAINING BENEFITS METHOD

(In Thousands of Dollars)

	ITEM	FLOOD CONTROL	POWER	IRRI-GATION	NAVI-GATION	TOTAL
1.	Benefits	500	1,500	350	100	2,450
2.	Alternative Cost	400	1,000	600	80	2,080
3.	Benefits Limited by Alternative Cost (lesser of items 1 & 2)	400	1,000	350	80	2,080
4.	Separable Costs	380	600	150	50	1,830
5.	Remaining Benefits (items 3 - 4)	20	400	200	30	650
6.	Allocated Residual Cost (Item 5 divided by sum of item 5's for all purposes = % of residual cost allocated to each purpose.)	18 (3%)	360 (62%)	180 (30%)	27 (5%)	585 (100 %)
7.	Total Allocation (Items 4 + 6)	398	960	330	77	1,767

SECONDARY AND REGIONAL BENEFITS

Senate Document 97 sets forth certain economic factors as essential to the planning of all types of projects. The key factor is an expectation of continued economic growth:

> Formulation and evaluation [of water resource project plans] shall normally be based on the expectation of an expanding national economy in which increasing amounts of goods and services are likely to be required to meet the needs of a growing population, high levels of living, international commitments, and continuing economic growth.

It is not within the scope of this study to discuss the validity of assuming eternal economic expansion. Suffice it to say that this assumption is currently accepted in virtually all types of economic planning. On the other hand, there seems to be a growing body of doubt about both the feasibility and the advisability of infinite economic and population growth in a world of finite resources. Certainly we can say that this question must receive careful attention in future long-range planning for all areas of our national life, including water resource planning.

The actual impact of a water resources project upon economic expansion is defined as the increased production of goods and services within the region (regional benefits) as a result of the project. The method of evaluating economic expansion effects takes into account the following factors:

1. Effect of money spent in the region as a result of construction of the project and subsequent operation and maintenance.
2. A multiplier effect of the above money as it is transferred through the local economy.
3. The assumption of the inducement of large-scale industrial growth, over and above the economic growth normally assumed. (See section on flood control benefits.)

Most of the problems encountered in measuring economic expansion effects arise because many of these benefits seem to be secondary. They often consist of income gains in the project region that are offset by income losses in other regions. The net gain to the national economy from these secondary benefits may be zero. (The Bureau of Reclamation uses secondary benefits most often while the Corps of Engineers usually limits their use to Appalachia projects.)

Secondary benefits, as described in Senate Document 97, may be used by federal agencies in the evaluation of project benefits, but this does not mean that economists have come to any agreement on how to measure secondary benefits or, indeed, that they even exist at all. While Senate Document 97 sets up the criteria of using two b/c ratios, one in which the "amount of secondary benefits attributable to the project from a national viewpoint shall be included" and a second b/c ratio in which "other secondary benefits shall be included," (presumably regional ones), there seems to be confusion both on how to measure the magnitude of these benefits and how to use the two b/c ratios. Economist Dr. Barry Field has stated, "Perhaps all (economists) would agree that the attempt to measure secondary benefits greatly increases the risk of overstating project benefits."

The Corps has been criticized for apparently arbitrary decisions on the magnitude of secondary regional benefits. For instance, in the Logan Dam project in Ohio, 96% of the regional expansion benefits are attributed to 2 industrial parks that were predicted for future construction in the area. There did not seem to be any reason to assume that this development would actually take place; in fact, it seemed very unlikely. However, in Logan, as in other Corps projects, secondary benefits were not used exclusively to justify the project. Secondary benefits may be included but cannot, in themselves, be used to economically justify a project.

There are many other things to look for when analyzing regional benefits. For instance, some secondary benefits have only a short-term effect on the local economy, including the additional income brought to an area during construction of a project and usually a "local" dislocation of the economy. When construction is completed, these benefits cease to exist. There is the possibility that these benefits might be credited for a period of time long after they have actually ceased to exist.

In addition, there is a cost to the region where the project is located that includes additional services that need to be supplied during construction. For instance, police, fire protection, and school facilities might need to be increased during the period the construction workers and their families are in the area. Where Corps projects are constructed in sparsely-inhabited areas, the effect of increased wages and spending can significantly influence local inflation and cause serious economic dislocation (Libby Dam, Montana).

The claim of regional secondary benefits has been criticized for favoring the interests of groups or individuals over the general public interest. In a Columbia River Conservation League report on the Upper Columbia River Navigation Project, it was stated, "Redistributive effects of many programs are in favor of groups who are powerful enough to use government programs for their own continued existence." This is not a denial of secondary benefits; they are quite real. Rather, it is a reminder that these regional benefits will often be absorbed by a few powerful interests.

Employment is another economic factor designated in Senate Document 97 for planning consideration. Under conditions of less than full employment on a national scale, appropriate standards set by the President would be applied to the planning process. In the case of "chronic and persistent unemployment in designated areas. . . project benefits shall be considered as increased by the value of the labor and other resources required for project construction, and expected to be used in project operation, project maintenance, and added area employment during the life of the project, to the extent that such labor and other resources would--in the absence of the project--be utilized or underutilized."

Regional unemployment is a particularly relevant issue when a proposed Corps of Engineers or other water resources project seems questionable in an environmental way. Naturally, project proponents in a high-unemployment area can win the support of the local people with the promise of federally-financed jobs. Congressmen are particularly sensitive to this form of persuasion, and rightly so. And yet, even the neediest of areas will not benefit in the long run from a project which might bring ecological disaster to the region. Furthermore, a careful search for job developments in ways other than civil works projects should be made when a jobs-equal-justification attitude prevails among the promoters of a Corps of Engineers or water resources project. This might include the attraction of new business or creation of new social service jobs. The current unemployment problem in Washington State definitely increased the problems of the conservation groups opposing the Ben Franklin Dam and navigation projects and, in a now resolved economy-versus-environment struggle outside the Corps, the supersonic transport.

We would like to emphasize that should the new WRC guidelines for water and land resource development be implemented in their present form, regional benefits will have equal priority with national economic development, environmental quality, and social well being. These regional factors will be considered much more thoroughly in future Corps projects than they are now under Senate Document 97.

PROPOSED GUIDELINES FOR WATER RESOURCE PROJECTS

All Federal water resource projects are currently evaluated under the guidelines established in Senate Document 97. But because of public and Congressional dissatisfaction with these guidelines, the Council decided to review and revise the evaluation practices and to try to create better ones. A Special Task Force has studied the problem for the Council and has proposed significant changes in its report, Standards for Planning Water and Land Resources, completed in July, 1970. Although the details of the proposed changes are still being worked out in the various Federal agencies, many of the principles contained in the Task Force report are already in use within the Corps of Engineers. Formal adoption of the new Water Resource Guidelines is tentatively expected in late 1971 or early 1972.

Basically, the changes in planning guidelines involve a switch from a primarily single-objective to a multi-objective approach. Under Senate Document 97, every effort is made to maximize the total net, national economic benefits of a project. By contrast, the new guidelines will work toward a balancing of strictly dollar-related benefits with less tangible benefits such as environmental quality and social well-being. In explaining the reasons for the changes to a gathering of the Rivers and Harbors Congress in March, 1971, W. Don Maughan, Director of the Water Resources Council, said:

> Under present procedures plans are supposed to be formulated under rather rigorous economic standards to achieve maximum net economic benefits. Adjustments are supposed to be made in this most /economically/ efficient plan to take /secondary/ account of other considerations such as the environment, public health, or income distribution effects. . . This approach has not worked too well. Primary weight has been given to monetary values. Not enough information has been reported on alternative plans. Decision-makers have not had information available to them on tradeoffs between monetary and non-monetary values. The system does not provide a basis for planning for non-efficiency objectives. . .
>
> Plans for the uses of the nation's water and land resources will be directed to improve contributions to the multi-objectives of national economic development, environmental quality, social well-being, and regional development. Planning for the use of water and land resources in terms of these multiobjectives will aid in identifying alternative courses of action and will provide the type of information needed to improve the public decision-making process.

The Special Task Force has defined four broad objectives (the multiobjectives) in planning the use of our water and land resources:

A. To enhance national economic development by increasing the value of the Nation's output of goods and services and improving national economic efficiency.

B. To enhance the quality of the environment by the management, conservation, preservation, creation, restoration, or improvement of the quality of certain natural and cultural resources and ecological systems.

C. To enhance social well-being by the equitable distribution of real income, employment, and population, with special concern for the incidence of the consequences of a plan on affected persons or groups; by contributing to the security of life and health; by providing educational, cultural, and recreational opportunities; and by contributing to national security.

D. To enhance regional development through increases in a region's income; increases in employment; and improvements of its economic base, environment, social well-being, and other specified components of the regional objective.

Perhaps the single most important statement in the proposed Principles follows the four objectives: "No one objective has any greater inherent claim on water and land use than any other" (emphasis added). In planning for the use of our water and land resources in the future, all four objectives will be considered equal, as opposed to the primacy of national economic development (NED) in past planning. In certain instances, plans formulated expressly to emphasize one or more of the other objectives may be given higher priority, over that of NED. The Principles go on to say, perhaps somewhat idealistically, that the multiobjectives will not be mutually exclusive with respect to benefits and costs, since the final choice of a plan will be made by considering the differences (in certain units) between alternative plans as to their beneficial effect and adverse effects on all the objectives. This is problematical, however, since there will doubtless be occasions when the four objectives will be mutually exclusive.

Given a choice between two courses of action, one of which will work to "enhance national economic development" but seriously harm the "quality of the environment," and the other of which will do the opposite, how does a Corps planner decide which objective to pursue? Although it is not in the water resource area, the Alaska pipeline dilemma illustrates this problem dramatically.

Under the new guidelines, the terms "benefit" and "cost" have meaning only as they relate to the four objectives. The Task Force reports says:

> Benefits are defined as positive (beneficial) contributions toward the accomplishment of the multiobjectives. These benefits may be of an economic, social, physical, or other nature. Whatever their nature, benefits only have meaning when identified as contributions over time and place toward achievement of objectives.
>
> Costs are defined as the negative (adverse) effects on the multiobjectives. Costs, like benefits, may be of an economic, social, physical, or other nature and should be taken into account at whatever time or place they may occur. . .

In other words, there are NED benefits and costs, environmental quality benefits and costs, social well-being benefits and costs, and regional development benefits and costs which will have equal priority in selecting the most viable alternative plan. These benefits and costs are to be measured in terms that are meaningful to the respective objectives, not necessarily monetary terms. Benefits and costs will be expressed in (monetary and non-monetary) quantitative units whenever possible. All those benefits and costs that cannot be quantified will be described in meaningful qualitative terms. This means such intangible benefits and costs as aesthetics will be given equal consideration. This is a striking departure from Senate Document 97 in which only those factors that could be measured in monetary terms were given priority.

As a whole, the implementations of these guidelines would offer encouragement for environmentally concerned citizens; however, a more careful look at the proposal is warranted. Just as environmental concerns will be considered equally with national economic development (NED), so will regional development. In the past, it has been the pressures of local groups such as navigation and power interests that have brought civil works projects to a particular region under the guise of NED when, in fact, a given project had only regional benefits. The new guidelines may give new impetus to these local concerns to push for their pet projects. There is also a change concerning the discount rate (interest rate) policy for the evaluation of projects. In the past, there have been frequent changes in this discount rate (3 1/2 to 4 5/8 to 5 1/8) which tended to disrupt the planning activities of many projects and helped kill some projects just prior to authorization (see Case Study I). The new guidelines propose to freeze the interest rate for relatively long periods of time to avoid these disruptions. Economists and environmentalists must hope the rate is set higher than 5 1/8% now used, if efficient economic considerations are to be given to construction and environmental costs over a period of time.

To improve public participation and to encourage more comprehensive participation by Federal, regional, State, and local governments and private interests in water resource planning, the Task Force has recommended to the Water Resources Council that it ". . .support and encourage research and development of systems analysis and computer programs to provide the support required in planning, so that all participating interests may readily test out alternative plans with their own assumptions and weights for various objectives" (emphasis added). This is another area for significant input to water resource planning by citizen groups, particularly if they can develop viable alternative plans and have systems analysis expertise available to them.

A credit to the foresight of the Special Task Force, is the inclusion in the new guidelines of risk and uncertainty parameters in project planning. Risk is basically the chance of certain events occurring even though their sequence and time of occurrence cannot be determined. If present data shows that a 100 year flood has occurred three times in the last 20 years, then the risk factor of these floods is greater for projects in the area flooded than if no 100 year floods had occurred in the same area over the past 20 years. This is called "predictable risk" and knowing this risk beforehand could result in planning a project for the average conditions or planning it for the extreme conditions (100 or 1000 year floods, for example). Uncertainty is characterized by the lack of any previous data on which to base even an estimate of the chance of a particular event occurring. This is often the situation in water resource planning.

We feel the proposed guidelines are a slight improvement over Senate Document 97 and a short step toward realizing our ecological problem. However, by July, 1971 the likelihood of the new criteria being formally adopted as we have described seemed doubtful. OMB had taken a strong stand against the multi-objective approach. In a memorandum from OMB's assistant director, Donald B. Rice, to W. Don Maughan, the Water Resources Council's executive director, OMB stated, "The task force report provides for the recommendation of plans to meet objectives of regional development, environmental quality and quality of life even when costs, on a national income basis, exceed the benefits. We strongly disagree and believe no plan should be recommended unless the addition to national income exceeds the costs."

The memo also disclaimed secondary benefits but said secondary costs should be included. OMB also strongly indicated that the "opportunity cost" principle should be the guide for establishing the discount rate. Such a rate would probably amount to between 10 and 15 per cent as compared to the 5½ per cent in the proposed guidelines. Mr. Rice also said the Water Resources Council should give greater consideration to cost-sharing with local interests and project beneficiaries bearing a substantially larger share of project costs.

To water resource development proponents the OMB proposals appear as sure death to most future projects. From an ecological standpoint this would be a blessing. In the minds of most conservationists, the fewer water resource projects the better. It appears on the surface, that OMB's restrictions would do much to solve our ecological problem. If their suggestions are implemented, they could significantly reduce the number of water development projects which might force the development of more ecologically sane water resource technology. Better still, stopping all but a few projects, may make more people realize that we only have so much usable water which can only support a limited number of people with a stable rate of consumption. This kind of action is attacking the causes of our natural disorder, not the effects.

Relative to the kind of suggestions made by OMB, the WRC proposed guidelines appear weak, ecologically. An increase from 5 1/8 to 5½ per cent in the interest rate and the failure to increase the amount of cost-sharing are two examples of this relative weakness. In view of the increasing reluctance of local interests to provide assurances and cost-sharing, OMB's idea of increased cost-sharing becomes more significant to environmentalists.

In July 1971 an executive office task force,including OMB, CEQ and the Council of Economic Advisors, was meeting with WRC and the Dept. of Interior and Dept. of Army to iron out their differences, the results of which were due to be made public in the Federal Register in the late summer or fall of 1971. Reliable sources involved in parts of the discussions have said that the Executive Office was not pursuing the idea of increasing cost-sharing. Cost-sharing will remain the same in the future proposal. OMB also did not pursue their statement in the Rice-Maughan memorandum on including secondary costs and excluding secondary benefits. Secondary benefits will not be planned on in the next draft except when Congress authorizes these kinds of benefits for a particular region, such as Appalachia.

More significantly, the Executive Office task force has been successful in getting the social well-being objective dropped in the next draft of the guidelines. They have also deleted the benefits from Unemployed Resources when computing rational economic development benefits, although these Unemployed Resources have been left in for computing regional benefits. The primary issue of debate between OMB and WRC is the method of determining the new interest rate. Both parties were very tight-lipped about the subject and the only hint that could be wedged out was the fact that OMB was pursuing the theory of economist Jacob Stockfisch for computing the discount rate. OMB officials have indicated that this method would give an interest rate of about 10 per cent. In July 1971, the Executive Office group and the water resources representatives were at an impasse on the discount rate issue.

Following these meetings WRC will again draft the proposed guidelines and publish them in the Federal Register. WRC would not be obligated to include any of Executive Offices suggestions and the final draft could be very nearly the same as the previous draft. However, if WRC and the various agencies which use WRC guidelines wish to have updated criteria they would do well to incorporate the recommendations of the Executive

Office, since the President has to sign the new guidelines into law, if they are in agreement with his budgetary policy. The purpose of these high level meetings was to bring the WRC ideas and the policies of the President into agreement so that new guidelines could be put into use by 1972.

After the revised proposal is published in the Federal Register there will be a period of 90 days for comment by the public and government agencies and Congress. WRC has also decided to hold public hearings on the new guidelines after they become public information. This would be an excellent opportunity for citizens and groups to express their views on the ecological and economic aspects of future water resources development. We would hope the public supports a 10 to 15 per cent interest, a significant increase in cosT -sharing by local interests and project beneficiaries and equal consideration of environmental factors with economic factors.

Concerned citizens can write to the Water Resources Council, Suite 900, 1025 Vermont Ave. NW, Washington, D.C. 20005, for copies of the proposals and for information about hearings.

SUGGESTED READING

Chapter 5

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CHAPTER VI

Some Thoughts on Costs and Benefits

Most civil works projects contracted by the Army Corps of Engineers are designed to serve two or more purposes and are thus known as "multi-purpose projects." As we have seen in the last chapter, the costs and benefits of such projects are divided among the various purposes to be served, with costs allocated among the various governmental levels and local interests.

Citizens groups seeking to understand and influence the economic justification for Army Corps projects will need an introduction to the criteria for assessing typical costs and benefits of some of the purposes of a multi-purpose project--flood control, navigation, water quality and supply, and recreation. We hope to provide that introduction in Chapter Six and to make the economic facts more concrete by reference to several particular projects.

We wish to emphasize once more the desirability of obtaining a professional economist to do an economic evaluation of a project for the citizens' group. If there is a college or university nearby, the students, staff, and faculty can be of great help. A class or a student group may be willing to take on an economic study as a group project, or a graduate student might use such a study as a dissertation. The Corps has economists working in its behalf; in order to do an effective independent analysis, the citizens' group should use economists of equally high calibre.

WHICH COSTS MORE - FLOODS OR FLOOD CONTROL?

The Corps has had primary Federal responsibility for flood control since the passage of the Flood Control Act of 1936. Since that year, the Corps has completed some 650 flood control projects costing about six billion dollars. In addition, projects with an estimated cost of 3.5 billion dollars were under construction as of 1968, with many other projects authorized,but not yet started.

There are many different ways of reducing damage caused by floods, through both structural and non-structural methods. The three basic structural flood control methods used by the Corps (often in combination) are 1) confining water within the floodplain with levees; 2) enlarging channel capacity with levees, dredging or channel straightening; and 3) storage reservoirs. Non-structural methods (which depend on others besides the Corps) include flood plain zoning and construction of buildings so as to minimize flood damage (building on stilts, garages on ground floor, etc.). Although the Corps supports such actions as flood plain zoning by local planning bodies, its own projects are heavily oriented toward structural remedies and therefore act as disincentives for local, non-structural flood control. It is clear that flood control has been, and will continue to be, a very important job of the Army Corps of Engineers.

Primary benefits from flood control are measured as the reduction in damage from floods expected to occur after project construction, compared to damages likely to occur without the protection afforded by the project. The Corps often seems to overestimate the damages from floods prior to project construction, thereby assigning artificially high benefits to the project. For example, as was seen in the discussion of the Oakley Dam in Illinois, figures for flood damage to agricultural lands might be included even though some of those lands are in the federal idle-acres program, in which farmers are paid not to grow crops. How does one measure the value of unused farmland? Does flooding really damage it? Does preventing floods really enhance its value to the nation as it does to the owner?

Also, there are examples of an apparently arbitrary increase in estimates for flood damage reduction from a project to offset rising costs and thus keep the benefit-cost ratio above unity. For instance, in the proposed Logan Dam project in Ohio, estimates in the Corps final feasibility report were higher than those in the preliminary report, even though the two estimates were based on the same data. Increases like these should be questioned by the public. Recently, the Secretary of the Army recommended a complete restudy of the environment and economic aspects of the Logan Dam project.

A basic assumption behind the method of evaluating flood control benefits is outlined in Senate Document 97, which states that "formulation and evaulation shall normally be based on the expectation of an expanding national economy" (Section V A2). So primary benefits, that is benefits in flood damage reduction, are assumed to increase annually. Also, the Document states that there may be an increase in the net return from higher use of property made possible as a result of lowering the flood hazard. As a result, project benefits often predict a sharp increase in flood plain usage, stemming from assumed high rate of future development, which results in turn from the increased safety of the flood plain provided by the project.

On the other hand, while benefits from increased development are counted, induced community costs resulting from this development are sometimes overlooked. According to Senate Document 97 (Section V F4) induced costs include estimated net increases in the cost of government services directly resulting from the project, such as schools and water treatment plants, and net adverse effects on the economy, such as increased transportation costs. One example of this can be seen in the proposed Pescadero Dam project is San Mateo County, California. In this case, an $8,000 per acre increase in land values on the flood plain was claimed as a flood-control benefit. But the extra costs that the county residents must pay to the local government in taxes and services on this land are not included. However, the Corps, as a matter of policy, usually does try to include damages in project planning.

The Corps and its critics alike have noted with some irony that the nation's flood damage potential is actually increasing despite--and sometimes because of--the Corps' flood control projects. This paradox is the result of development on the flood plain which may not have been undertaken without flood protection. As land values and building construction take an upward jump, so do the damage costs when an unusually severe flood surpasses the holding capacity of the project. Sometimes, even without a flood control project, an unwise development policy has been followed on the flood plain despite the ever-present danger of flooding. In those cases, after pleas from local people who have suffered flood damage, the Federal government must come in and bear the cost of a flood control project which would not have been necessary if the flood plain had been left undeveloped.

The answer to the dilemma, clearly, is careful planning and management of the flood plain and cost sharing by the Federal, state and local governments. Planning and zoning are a local responsibility, although the Corps can do much to encourage preservation of open space on the flood plain. One positive aspect of the Oakley Dam proposal in Illinois is the Corps' plan for a 4,000-acre recreational "greenbelt" area on the flood plain, precluding private development. Formerly, the Corps had proposed to channel the 100 miles of river below the dam. Citizens can take an active role in flood plain management by seeking office on the local planning and zoning board and working hard for responsible flood plain zoning.

On the other side of the coin, the Corps and project proponents must stop using the projected development of the flood plain as a justification for its flood control projects. By counting among the project's benefits the economic boost of increased land values or commercial, industrial, and residential development on the flood plain, the Corps may boost the b/c ratio over the 1:1 mark, but may ignore the potential costs of increased flood damage. Clearly, it cannot work both ways. The Corps may find that the law of supply and demand will actually turn an open space plan into a greater benefit than a development plan, since the supply of open space is dwindling rapidly. This type of justification is more the fault of Senate Document 97 than the Corps of Engineers. However, the Corps as primary user of S. D. 97 could do the most to implement a change if it exerted pressure on Congress to consider a change.

Measuring flood control benefits in agricultural areas also poses problems. For example, should the benefits be measured in terms of the potential increase in net incomde to the farmer through increased agricultural protection? A lack of demand for agricultural products may lead to participation in the federal idle-acreas programs or to federal price supports for the products. In that case, the increased acreage will actually contain new costs for the government, and few benefits. From an ecological standpoint, the fertility of the land may actually be reduced because of the interruption of the natural pattern of flooding on the land. These economic and ecological problems were mentioned by the members of the Committee on Allerton Park in their answer to the Corps' claims of flood control benefits of the farmland near the proposed Oakley Dam.

Even when a flood control project does reap clear benefits on agricultural lands, the benefits usually go directly to the farmers. The Flood Control Act of 1936 justifies "...benefits to whomsoever they may accrue." However, if these benefits are affected by costs to farmers elsewhere, then there may not be any national economic benefits. The real effect may be zero economic benefits.

NAVIGATION: STEERING A STRAIGHT COURSE FOR SPECIAL INTERESTS

The Corps of Engineers has been working on navigation projects since 1824, when Congressional authorization made navigation improvement the first civil activity of the Army Corps. Since then, the Corps has developed navigation projects on over 22,000 miles of waterways in the United States.

The changing technology of water transportation has kept the Corps busy with navigation projects. As new channels and canals are completed, they risk becoming quickly obsolete because of the development of larger barges with a deeper draft. Some navigation projects which were hailed as the last word in water transportation when they were completed some years ago are now liquid white elephants. Upon completion of the first leg of the now cancelled Cross-Florida Barge Canal in 1970, a barge was ceremoniously escorted into the waterway on the 4th of July. The District Engineer hailed the occasion as a "Foreshadowing of things to come"--words he doubtless regretted when the barge ran aground and resisted all attempts to move her for three days! As techniques of barge-building continue to change, the Federal government will have to decide whether it wishes to continue the race by expending vast new sums to keep apace in navigation improvements, at the expense of a failing railroad system, and grossly underfunded rapid transit programs.

The Corps is usually able to show that its navigation projects will make water transportation more economical. But too often, full consideration of alternatives seems to be neglected. Project opponents often criticize the Corps for considering only a narrow range of possibilities and citizens' groups have presented evidence in favor of ground transportation, by truck or railroad, instead of river navigation. Indeed, the Corps is not a free agent in this matter, since its authorization does not permit it to implement ground transportation. This lack of authority is a serious shortcoming of the decision-making processes for public work projects.

Interestingly enough, one of the early and persistent opponents of the now-defunct Cross-Florida Barge Canal was the Association of American Railroads. While admittedly an organization with a vested interest, the Association did point up the lack of consideration given to ground transportation by the Corps and the Congress in planning the Canal. Furthermore, the railroad group pointed out that the primary beneficiaries of such projects are the waterway transportation interests, notably the barge companies. This can be inequitable. The Corps provides the barge line with a free roadbed, while railroads must construct their own facilities and trucks must pay very insufficient taxes to support highways. Only barges get a relatively free ride. If the benefits are real, barge owners should be willing to pay for them, perhaps through some sort of toll arrangement.

Benefits to the barge companies may also be costs for the larger public, since the people usually find the waterway less attractive or accessible for their own use after improvements for barge transportation have been made. An independent organization making an economic analysis of navigation projects must ask who will receive the benefits. When the recipients of supposed "national" benefits are primarily a specialized group, the Corps should be asked to reflect that fact in its b/c ratio by giving the benefits a reduced value since the public isn't really the beneficiary or by showing a greater cost to the general public for supporting private interprise.

As we have seen in our earlier discussion of regional benefits, one region's benefit may be non-existent. Regional benefits include both goods and services which result directly from the project and "external economies", the transfer of resources (both manpower and materials) from one area to another. It is the latter type of benefit which often nets a large zero on a national scale, but that may be justified in the Appalachia Region.

The values of projected regional benefits are often closely tied to the size of projected population growth for the area; a high population increase will, of course, greatly increase the projected benefits. To some extent, a high population projection may be self-fulfilling since it will encourage the construction of projects which will, in turn, foster the anticipated growth. Again, there are hidden costs. The price of supporting our increasing population is not computed in a projection of regional benefits. To include costs of this type, a much more comprehensive type of planning would have to be utilized, involving considerable inter-agency cooperation. It is not, after all, in the Corps' province to provide schools, police and fire protection, transportation and other services for a growing population. Yet the net effect of ignoring such costs is an artificial inflation of regional benefits.

WATER QUALITY CONTROL: TREATMENT, NOT DILUTION

One of the Corps' methods of improving water quality through its public works projects is the procedure known as "low flow augmentation". In more graphic terms, the method is sometimes called "sewage dilution". It is essentially the process of storing water in a reservoir and then releasing it at a prescribed rate to flush the pollutants through the river downstream. Since the passage of the Water Pollution Control Act Amendments of 1961, low flow augmentation has been a legitimate purpose of multi-purpose dams and reservoirs constructed by the Army Corps of Engineers.

The problem with low flow agumentation is that is is not efficient in maintaining or increasing water quality. Environmentally, it is a product of the same thinking which assumes that the best way to avoid floods is to get the water downstream as fast as possible. Low flow augmentation does not get rid of the pollutants; it merely dilutes them. Untreated pollutants eventually move downstream to become the problem of other cities and eventually to become a problem for the world, as marine pollution. This method may require a great deal of water and is not effective in handling many pollutants, such as acid mine drainage heavy metals and pesticides. A virtue of low flow augmentation is that it may serve to maintain sufficient water flow in a river, to retard the development of oxygen-depleting algae and maintain permissable levels of dissolved oxygen and water temperature during the warmer months. In those cases, some augmentation is better than no augmentation.

The benefits of low flow augmentation as part of a multi-purpose dam are sometimes overstated (Oakley Dam). Benefits are determined by using the alternative cost method--that is, the cost of including low flow augmentation in a multi-purpose project is compared to the least cost alternative means of achieving the same results. Of course, there is not absolute assurance that such an alternative would be undertaken in the absence of the multi-purpose project.

The Corps sometimes considers a single-purpose dam as the most likely alternative to the multi-purpose dam. This is most unrealistic, since it is unlikely that a dam designed just to provide sewage dilution would ever be built. The cost would be prohibitive. But when compared with the single-purpose dam, the inclusion of low flow augmentation in a multi-purpose dam appears to be very economical. Clearly, the alternative methods considered should be broadened to include tertiary sewage treatment plants, which are universally recognized as a far more effective pollution abatement device.

A further problem, often unrecognized, lies in the possibility that a multi-purpose dam may create water quality problems of its own. When a reservoir is used for both recreation and flow augmentation, the release of a large amount of water for flow augmentation will almot certainly result in a substantial drawdown of the reservoir, exposing mudflats and speeding up the eutrophication (enrichment) process there. A reservoir in this condition is not very appealing to boating or swimming enthusiasts. And if the water quality aspects have an undesirable effect on the recreational aspects, the reverse is also true. Heavy use of the reservoir for swimming and boating can cause a rise in the bacterial level and oil residues in the water. This effect needs to be recognized as a reduction in both water quality and recreation benefits.

RECREATION

As the primary federal water resource development agency, the Corps plays a major role in providing outdoor recreation. In fact, if one uses numbers of visitors as the criterion, the Corps runs the largest recreation program in the Federal government. The American public is demanding and using more and more recreational areas as the population grows and leisure time increases. The Corps, having completed flood control and navigational projects on most of the nation's major rivers, is turning more and more to the development of recreational facilities. In its 1968 Annual Report, the Corps stated that "recreation has become such an extensive use of water resource projects that it can be considered a significant factor in the economic justification for the construction of multiple-purpose reservoirs."

The first step in measuring recreational benefits of a proposed multi-purpose project is to determine present and future demand for recreation facilities. This is determined by measuring the participation rate for the current population of the region at existing recreational facilities and then extrapolating these rates into the future by multiplying expected future population by the current participation rate. The product obtained is the estimated future demand. This method, employed by the Corps, the Bureau of Outdoor Recreation of the Interior Department, and other public agencies, has been seriously criticized because the figure obtained is actually the result of an interaction between present demand and supply, rather than an accurate measure of future demand. That is, the current participation rate depends as much on present recreation opportunities, or supplies, as it does on present demand. Using the currently-accepted procedure, one may come to the conclusion that an area with adequate recreational opportunities should have more facilities constructed, since the participation rate in this area is likely to be relatively high.

In the plans for Ohio's Logan Dam and Reservoir, for example, recreation accounted for 76% of the project's benefits and over half of the allocated construction costs. This seems an extraordinary portion, considering the fact that Logan was conceived as a flood control project and the fact that 19 state parks, one national forest, and 21 other recreation facilities already exist within a 100-mile radius of the proposed dam site. More importantly, the Water Project Recreation Act(PL 89-72) does not allow the costs allocated to recreation and fish and wildlife to exceed 50 percent of the total project cost.

Furthermore, the Corps' proposals for recreational development at Logan are, to some extent, a substitution of one kind of recreation for another kind already in existence, rather than the creation of recreational opportunities where none exist. The Clear Creek area, where the reservoir would be, currently offers abundant fishing and pleasurable walking and riding through a gorge which is unique in flat Ohio and which would be lost to flooding from the dam. Instead, the Corps and the state would provide a high-density, highly-developed recreation area, as seen in the Corps' own description:

> The development plan for Clear Creek State Park constitutes a complete recreational complex. Facilities would include a lodge and dining hall, vacation cabins, swimming beaches, boat launching ramps and docking areas, and provisions for sightseeing, picnicking, and tent and trailer camping. Upstream lands will be managed for wildlife, and fishing access areas will be provided downstream.

The Clear Creek Gorge, like Allerton Park, is used extensively for scientific research by Ohio University. Scientists, as well as the Bureau of Sport Fisheries of the Interior Department, have expressed their unhappiness over the prospect of losing such a unique area. The project has not yet been authorized by Congress, and the Corps seems to have put the plan in mothballs temporarily. Citizens in Ohio, including the Ohio Environmental Council and Mr. W.E. Benua (who owns land in the Clear Creek area and who hired a Washington law firm and Dr. Barry Field to do a careful legal and economic analysis of the project), are keeping a close watch on the status of the Logan Dam and Reservoir proposal.

Recreational participation levels, both current and projected, are measured in terms of "user days" and "value per user day". These measures are used by all Federal agencies, not just the Corps of Engineers. When the Corps describes a certain facility as providing 30,000 user days per month, ideally this means that an average of 1,000 people use the facility each day of the month. Realistically, of course, some days see heavier use than others. In planning new facilities, the Interior Department's Bureau of Outdoor Recreation currently uses the assumption that the average recreational facility will have three capacity days per week during the recreation season. According to Dr. Field's report the Corps, in making future projections, has assumed a change in work patterns leading to the realization of five capacity days by the year 2000 and capacity level every day by 2040. While current trends do seem to be leading to a four-day work week in some segments of the economy, the Corps' prediction of full-time capacity of recreational facilities does seem far-fetched. Naturally, such a projection has the effect of increasing future recreational benefits.

The concept of "value per user day" may be equally arbitrary. It is defined as the price a person would be willing to pay for a typical day at the recreation facility, whether or not he does, in fact, pay. Benefits having no standard market price are measured according to the "willingness to pay" idea. Federal guidelines for all agencies have been established for the permissable range of values per day for recreational facilities:

$.50 to $1.50/day for generalized recreation
(Swimming, boating, hiking)

.. $1.50 to $6.00/day for specialized, low-density recreation
(Camping facilities, nature trails)

Although the value-per-user-day figure is a quantitative one, it should reflect qualitative factors; a low-density camping area provides higher-quality recreation than a high-density, roped-in swimming area. Dr. Field has criticized the Corps for assigning the proposed recreational facilities at Logan Reservoir a value of $1.50 per user day despite the fact that they will provide only generalized recreation of a high-density nature.

As we pointed out in our discussion of water quality, recreational benefits claimed in the planning stages of a multi-purpose project are sometimes not realized to the extent planned. A reservoir which suffers from turbidity and silting, from driftwood, and from mud-exposing drawdowns cannot provide the recreation anticipated in Corps planning. There are a number of cases in which planned recreational benefits turned out to be unplanned public health hazards. In Carlyle Reservoir, Illinois, no-swimming signs have been posted because of improper sanitation facilities and a high-density use which increased the chance of cross-contamination by swimmers. High-density recreation areas, in particular, are subject to increasing numbers of fatal boating accidents and accidental drownings. In fact, on some reservoirs, deaths as a result of drowning far exceed those caused by floods before the dam (Carlyle Reservoir). These negative aspects of some reservoirs are, fortunately a minority. On many Corps reservoirs recreation use actually far exceeds that initially planned for the project with a resultant increase in the economy of the project area.

To keep a proper perspective we must realize that many Corps reservoir projects now provide water-oriented recreation where none existed previously--especially in the East, Midwest and central California. From its position, the Corps must also keep a proper perspective--all of mankind's leisure time needs will not be satiated by reservoirs alone--he needs pristine rivers and streams more than he needs man-made lakes.

Unlike flood-control costs which are paid by the Federal government, recreational costs are divided among state, local, and federal pocketbooks. State and local interests must assume 50% of the cost of recreational facilities in a multi-purpose federal water project. The Federal Water Project Act of 1965 (PL 89-72) provides that recreation may be a purpose for a federal water project only if non-federal interests agree to share equally the separable costs of facilities. The joint costs may be assigned to the Federal government. Cost-sharing arrangements depend on the specific authorizing legislation, as well as the applicability of general legislation.

WATER SUPPLY: WATER, WATER EVERYWHERE. . .

Since the passage of the Water Supply Act of 1958 (PL 85-800) storage for water supply has been recognized as a purpose of federal multiple-purpose reservoirs. Financing of municipal and industrial water supply are still considered to be the primary responsibility of state and local interests. Federal costs allocated for water supply of a federal multiple-purpose project may not exceed 30% of the total project construction costs, and these costs are reimbursable by the local water users over a 50-year period at federal interest rates.

There are several assumptions that are behind the evaluation of water supply costs and benefits. One of the most important is the need, both present and future, for a supply of municipal and industrial water. The present need can be evaluated, but future need projections present problems, just as future recreation projections do. Future water supply demand is closely related to population growth, future per capita and industrial use, and future water treatment technology.

Population projections, even when based on the soundest statistical data, are still uncertain predictions. This is especially true within limited geographical areas, where future population will depend not just on the birth rate, but also on the economic well-being of local industry and commerce and the availability of housing. The possibility of gross inaccuracy is increased by the use of extremely long-range planning. In the case of a water resource project with a planning life of one hundred years, it is exceedingly difficult to provide dependable population data for the future. What sage in the early 1870's would have had the foresight to predict our present population level or the urban and suburban migrations which have had such a profound effect on our national life?

It is also difficult to predict per capita use of water. The country has undergone a marked increase in usage both in industry (for cooling and electric power) and in residential use (for purposes as diverse as daily baths, lawn sprinkling, electric dishwashers and washing machines, and toilet flushings). It seems likely that the increase in industrial and per capita water usage could be leveled off in the future by increases in cost, but again, it is difficult to arrive at accurate predictions of the future industrial and population growth.

Water treatment technology is another important variable in determining water supply benefits for Corps of Engineers projects. By law, the Corps cannot implement alternatives which might, in fact, prove to be more feasible than impounding water in a reservoir. Improvements in technology are quite likely in the areas of water softening (which would open up numerous underground supplies for future use), desalinization of sea water, and treatment of water for recycling. These procedures are still at an embryonic stage, but the Corps needs to give them due consideration as possible alternatives to inclusion of water supply as part of a multi-purpose dam, and seek the authorization to consider these vastly superior alternative methods.

Of course, there are costs involved in drawing a water supply from a nearby impoundment. In addition to water treatment, which can scarcely be avoided these days, the transportation costs are usually taken into account. If these costs are overlooked or underestimated the benefits attributed to the water supply portion of a project will be inflated. The costs would have to be met by local taxpayers who may not have been aware of them when they originally supported the project.

SUGGESTED READING

Chapter VI

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APPENDIX CONTENTS

Dept. of the Army, O.C.E. EP 1165-2-1.Water Resources Policies and Authorities.

> This pamphlet summarizes the major water resources development programs authorized by Congress for accomplishment by the Corps of Engineers.

Dept. of the Army, O.C.E. EP 1120-2-55. Public Meetings in Planning.

> This circular explains the policy, responsibility and guidance for holding formally organized and announced public meetings of the Corps.

Dept. of the Army, O.C.E. EP 1105-2-507. Preparation and Coordination of Environmental Statements.

> This circular provides guidance for the Corps of Engineers in the preparation and coordination of their environmental statements as required by Section 102 (2) (C) of the National Environmental Policy Act of 1969 (PL 91-190).

Dept. of the Army, O.C.E. The Army Corps of Engineers and Environmental Conservation. 9 Questions.

> This pamphlet briefly explains how the public may better participate in project planning, how the Corps views our environment and what they are trying to do to resolve controversy. Essentially, this is the Corps' view of themselves.

Public Law 91-190. The National Environmental Policy Act of 1969.

> The act is included in whold for citizens to use as they see fit.

Addresses of the Division and District Offices and the Officer in Charge.

> The officer-in-charge usually changes in the district every 2-4 years and with this change may also come a different approach by a Division or District to environmental problems and public participation. Citizens should be familiar with the ecological awareness of the District and Division officers-in-charge.

Environmental Advisory Board of the Chief of Engineers: Names and Addresses.

> If a citizen group can establish an effective liaison

with one or more of the board members, they can increase their chances of significant input to project planning. The Advisory Board reviews all controversial Corps projects.

Pertinent Addresses for Citizens Involved with Water Resources Projects.

DEPARTMENT OF THE ARMY
Office of the Chief of Engineers
Washington, D. C. 20315

EP 1165-2-1

ENGCW-PL

Pamphlet
No. 1165-2-1

28 October 1966

WATER RESOURCES POLICIES AND AUTHORITIES

Water Resources Development Programs of the Corps of Engineers

1. Purpose and Scope. This pamphlet summarizes the laws and policies governing the major water resources development programs of the Corps of Engineers. It may be used by Division and District Engineers for public distribution to explain the nature and extent of Federal participation by the Corps and required non-Federal cooperation (State, regional and local) in water resources development.

2. Nature of, and Basis for, the Civil Works Program. a. The Civil Works Program has developed through a long series of River and Harbor and Flood Control Acts, which have gradually established the Corps of Engineers responsibility in water resources development. The program includes multi-project programs and single and multiple-purpose projects for the immediate and long-range development of the Nation's water and related land resources. Specific functions include commercial and recreational navigation, flood control, major drainage, hydroelectric power, water supply, water quality control, outdoor recreation, fish and wildlife enhancement and conservation, beach erosion control, and hurricane flood protection.

b. Water resource programs and projects originate in comprehensive river basin studies and specific survey investigations which are made in response to Congressional authorizations (Part A, below). Favorable survey reports are published as Senate or House Documents. Recommended projects may subsequently be authorized by Congress as Federal projects in Omnibus River and Harbor and Flood Control Acts. Further Congressional action is required for the appropriation of funds for engineering, design, construction, and operation and maintenance. Assurance of non-Federal cooperation of varying degrees is required prior to initiation of Federal construction. Projects for river basin development, flood control, navigation, and beach and shore protection on the coasts and Great Lakes (Part B) require specific Congressional authorization before construction. Within monetary limits, certain small projects for these purposes can be undertaken without specific Congressional authorization (Part C). In addition, Congress has provided broad general authorities to include water supply, water quality control, and recreational development in authorized and completed projects. The Corps of Engineers also performs certain disaster relief and emergency operations under special authorities (Part D).

This pamphlet rescinds EP 1165-2-1, 25 July 1963

A. GENERAL INVESTIGATIONS PROGRAM

3. Studies. The Corps of Engineers is engaged in comprehensive studies with other Federal and non-Federal agencies to develop long-range plans for the development of the Nation's river basins. Two types of comprehensive studies are currently under way: framework (Type I) and detailed (Type II). The framework studies will project long-range needs for water and related land resources, and will develop general plans and long-range programs for the major basins or regions. The detailed comprehensive studies of various river basins throughout the Nation will develop comprehensive basin plans and will recommend specific projects for authorization. The current program of comprehensive studies is scheduled for completion in 1972. Thereafter, continuing studies will up-date and revise the framework plans as changing conditions and expectations of the National economy warrant. Comprehensive river basin studies stem from specific Congressional authorizations and the Water Resources Planning Act of 1965 (Public Law 89-80).

4. Survey Investigations. Specific projects and systems of projects for the optimum development of water and related resources are investigated for engineering and economic feasibility in survey studies by the Corps. These studies, authorized usually by resolution of the Public Works Committees of the United States Senate or House of Representatives, culminate in recommendations to Congress on the desirability of authorizing Federal projects, and on the conditions of non-Federal cooperation considered warranted. The detailed steps of survey investigation, interagency coordination, and project authorization are outlined in EP 1120-2-1.

5. Flood Plain Information Studies. Section 206 of the Flood Control Act of 1960 (P.L. 86-645), as amended, authorized the Secretary of the Army through the Chief of Engineers to compile and disseminate information on flood hazards. The reports contain maps showing areas subject to flooding and depths that can be expected. Technical advice and guidance on planning the use of the flood plains and on reducing flood damages are also available. The studies are made at the request of State and other governmental agencies. Such studies are made largely at Federal expense within the limits of appropriated funds. Local interests are encouraged to provide mapping, aerial photography, stream flow records, and similar relevant assistance and information.

B. GENERAL WATER RESOURCES PROGRAMS

6. Navigation. Corps of Engineers responsibility for the improvement of rivers and harbors for navigation was initiated by Congress in 1824. Subsequently authorized projects developed the present policy of requiring local interests to provide the necessary lands, easements, and rights-of-way for project construction and for spoil disposal where needed, relocate or alter utilities, provide and maintain public terminals and berthing areas, and hold and save the United States free from damages due to the construction works. Special contributions may be required for single-user

projects and where land enhancement results from spoil disposal. Railroad and highway bridge alterations are financed cooperatively under Public Law 647, 76th Congress (Truman-Hobbs Act), as amended, where they unreasonably obstruct navigation. Recreational harbors may be recommended where feasible, and a local cash contribution of 50 percent of the first costs of the general navigation facilities allocated to recreational boating is required in addition to other cited requirements of cooperation. Maintenance of general navigation features is at Federal expense.

7. Flood Control. The Federal interest in nationwide flood control was established by the Flood Control Act of 22 June 1936. That Act states that the Federal Government should participate with non-Federal interests in flood control "if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of the people are otherwise adversely affected." The 1936 and subsequent Acts established the basis for the present policy on local cooperation followed by the Corps of Engineers. For proposed local protection projects, non-Federal interests are generally required to give assurances that they will provide lands, easements, and rights-of-way (including relocations and alterations of highways, highway bridges, and utilities); hold and save the United States free from damages due to the construction works; and operate and maintain the projects after construction. These three requirements are known as the "a-b-c" requirements of local cooperation. Flood control reservoirs, however, are generally exempt from such requirements except in special cases where the benefits are confined to a single locality and the project is in lieu of local protection works. Special local cooperation, usually as a cash contribution, may be recommended for flood control projects that produce "windfall" benefits to a few beneficiaries, or that involve land drainage benefits.

8. Major Drainage. The Flood Control Act of 1944 (P.L. 534, 78th Congress) defined flood control to include "major drainage." Federal major drainage improvements are defined to mean major outlet channels serving local land drainage systems. Administrative policy provides for equal sharing of the first costs of the major outlets, including lands, between Federal and non-Federal interests, with the latter to operate and maintain the project after construction, and to provide all off-project drainage improvements.

9. Hydroelectric Power. Power development may be recommended in reservoir projects if economically justified. Where power is not found immediately feasible, penstocks in dams may be included for future power development upon the recommendation of the Federal Power Commission. In multiple-purpose projects, the costs allocated to power are the basis for establishing rates by the Federal marketing agencies.

10. Water Supply. Municipal and industrial water supply is considered the primary responsibility of the municipalities or other non-Federal entities. However, storage capacity for water supply may be recommended in proposed or authorized reservoirs pursuant to the Water Supply Act of 1958 (P.L. 500, 85th Congress, Title III), as amended. Such capacity, under present policy, may be reserved entirely for water supply, or may be provided by joint use of seasonal flood control or other storage. Costs allocated to water supply for future use may not ordinarily exceed 30 percent of the total project construction costs, but exceptions may be recommended. Costs are reimbursable by the water users, through a local public agency, over a 40 to 50-year period at Federal interest rates. An interest-free period, until supply is first used but not exceeding ten years, is permitted under the law. Interim use for irrigation in the western States may be considered under the terms of Reclamation Law. The comprehensive northeastern United States water supply study under way pursuant to Title I of Public Law 89-298, approved 27 October 1965, recognizes the increasing Federal interest in the solution of regional water supply problems.

11. Water Quality Control. Reservoir capacity for streamflow regulation to improve water quality may be recommended pursuant to the Water Pollution Control Act of 1956 (P.L. 660, 84th Congress), as amended by Section 2 of the 1961 Act (P.L. 87-88). Such regulation may not be a substitute for adequate treatment or other methods of controlling waste at the source. The capacity may be reserved entirely for streamflow regulation or may be provided by joint use of storage serving other purposes. Costs allocated to water quality control may be assumed by the Federal Government if the benefits are widespread.

12. Recreation. Legislative and administrative policy encourages non-Federal interests to develop recreation areas and facilities at Federal projects. Outdoor recreation, including enhancement of fish and wildlife for fishing and hunting, may be recommended as a purpose of Federal water resources projects pursuant to the Federal Water Project Recreation Act of 1965 (P.L. 89-72). If non-Federal interests agree to cooperate in recreational development, the separable costs of recreational facilities may be shared equally between Federal and non-Federal interests and the joint costs allocated to recreation may be borne by the Federal Government. Cost-sharing in recreational development of authorized reservoir projects depends on the specific authorizing legislation, the status of completion of the basic project, and the applicability of general legislation. Section 4 of the 1944 Flood Control Act, as amended, permits development of recreational facilities at non-reservoir projects. Administrative policy provides for Federal participation if non-Federal interests will share equally in the cost, and will assume operation and maintenance. Certain minimum basic facilities for public health and safety may be provided at Federal expense. The fees established and collected pursuant to the Land and Water Conservation Fund Act of 1965 (P.L. 88-578) at qualified federally operated recreation areas are deposited to the credit of the Fund.

That Act provides for grants to States, their subdivisions, or other units, for planning and development of recreation areas.

13. _Fish and Wildlife Conservation._ Pursuant to the Fish and Wildlife Coordination Act of 1958 (P.L. 624, 85th Congress), the Corps of Engineers may recommend inclusion at Federal expense of certain project modifications and lands for fish and wildlife conservation purposes in proposed projects. Land and measures for the enhancement of the fish and wildlife resource require specific legislative authorization. Justified measures to mitigate any project-caused damages to the fish and wildlife resource are included in the costs allocated to all the purposes of the project.

14. _Beach Erosion Control._ The Act of July 28, 1956 (P.L. 826, 84th Congress), as amended by the River and Harbor Act of October 23, 1962 (P.L. 87-874), authorized the Federal Government to assume up to 50 percent of the cost of construction for protecting publicly owned or publicly used beaches, and up to 70 percent for protection of publicly owned shore parks or conservation areas subject to certain conditions in Section 103 of the 1962 Act. Non-Federal interests are required to assume all remaining costs, including lands, maintenance and repairs, and provide assurances that they will hold and save the United States free from damages, remedy pollution conditions that would endanger the health of bathers, and maintain public ownership and use of the protected shores on which Federal aid is based. When periodic beach nourishment is part of the best plan and a more economical remedial measure than other measures, authorization may be recommended for a specified limited time.

15. _Protection Against Floods Resulting From Hurricane Or Abnormal Tides._ The Corps of Engineers may propose plans for the protection of areas bordering oceans, estuaries or lakes which are subject to inundation as a result of hurricanes, other high winds, or unusual tidal phenomena. In presenting such plans for authorization by the Congress it is the policy of the Chief of Engineers to recommend that non-Federal interests be required to: (a) assume 30 percent of the first cost; and, (b) operate and maintain the proposed works. This policy is based upon precedent established by Congressional authorization of previous projects. Multiple-purpose projects for flood protection and the prevention of shore erosion are frequently proposed.

16. _Aquatic Plant Control Program._ Section 104 of the River and Harbor Act of 1958 (P.L. 85-500), and amendments, authorizes the Corps of Engineers to cooperate with other Federal and non-Federal agencies in comprehensive programs for control and eradication of plants. Non-Federal interests must agree to hold and save the United States free from damages that may occur from control operations and to finance 30 percent of the cost. The Federal Government may finance the research and planning costs of the program. Funds are allocated on a priority basis and there is a $5,000,000 annual limitation on Federal funds for the total program.

C. SPECIAL SMALL PROJECT PROGRAMS

17. General Considerations. Several laws provide general authority that permit the Secretary of the Army and the Chief of Engineers to authorize projects of limited scope within fiscal year appropriations. A project can be recommended under one of these authorities only after investigation clearly demonstrates its engineering feasibility and economic justification, and it is determined that it will be complete in itself and require no additional work to be effective. An investigation is made upon receipt of a formal request submitted to the District Engineer by a prospective sponsoring agency fully empowered under State law to provide the required local cooperation.

18. Small Flood Control Projects. Section 205 of the 1948 Flood Control Act, as amended by Section 205 of the 1962 Flood Control Act (P.L. 87-874), provides authority to the Chief of Engineers to construct small flood control projects that have not already been specifically authorized by Congress. The Federal cost of projects undertaken pursuant to this legislation may not exceed $1 million. The local sponsoring agency must agree to provide, without cost to the United States, all lands, easements, and rights-of-way, including highway, highway bridge, and utility relocations and alterations; hold and save the United States free from damages; maintain and operate the project after completion; prevent future encroachments on improved channels, and assume all project costs in excess of the Federal cost limit of $1 million.

19. Small Navigation Projects. Section 107 of the River and Harbor Act of 14 July 1960 (P.L. 86-645), as amended, provides authority for the Chief of Engineers to develop, construct, and maintain small navigation projects that have not already been specifically authorized by Congress. The Federal cost of projects undertaken pursuant to this legislation may not exceed $500,000. A Section 107 project can be constructed only if a State, municipality, or other public agency of the State empowered under State law has sufficient legal and financial authority to provide local cooperation and participation. Non-Federal interests must agree to meet the same cooperation requirements as for regularly authorized commercial and recreational navigation projects, and in addition assume all project costs in excess of the Federal cost limit of $500,000.

20. Small Beach Erosion Control Projects. Section 103 of the River and Harbor Act of 1962 (P.L. 87-874), as amended, provides authority for the Chief of Engineers to develop and construct small shore and beach restoration and protection projects that have not already been specifically authorized by Congress. Each project under Section 103 must be limited to a Federal cost of not more than $500,000, including any Federal share of periodic nourishment cost. Local cooperation is otherwise based on the same requirements as for regularly authorized larger beach erosion control projects.

21. Snagging and Clearing Projects for Flood Control. Section 208 of the 1954 Flood Control Act (P.L. 780, 83rd Congress) authorizes clearing and straightening of stream channels and the removal of accumulated snags and other debris in the interest of flood control. Each project selected must be limited to a Federal cost of $100,000. The non-Federal sponsoring agency must agree to provide without cost to the United States all lands, easements, rights-of-way, and all required alterations and relocations in utility facilities; hold and save the United States free from damages; maintain the project after completion; assume all project costs in excess of $100,000; and provide a cash contribution toward construction costs where "windfall" land enhancement or other special benefits would accrue. The cash contribution,where required, is computed in accordance with existing policies for regularly authorized projects.

22. Protection of Essential Highways, Highway Bridge Approaches and Public Works. Section 14 of the 1946 Flood Control Act provides special authority to the Chief of Engineers to construct bank protection works to protect such public works as highways, highway bridge approaches, municipal water supply systems and sewage treatment plants which are endangered by flood-caused bank erosion. A Section 14 project must be limited to a Federal cost of $50,000. The non-Federal sponsoring agency must agree to provide without cost to the United States all lands, easements, rights-of-way, and all required utility alterations and relocations; hold and save the United States free from damages; maintain the project after completion; assume all project costs in excess of the Federal cost limit of $50,000; and provide a cash contribution in proportion to any special benefits.

D. DISASTER RELIEF AND EMERGENCY PROGRAMS

23. Flood and Coastal Emergency Operations. The Flood Control Act of 1941, as amended by Public Law 99, 84th Congress and other Acts, provides the Corps of Engineers with a special continuing authority for flood and hurricane storm emergency operations. Activities include preparation for flood and coastal storm emergencies, flood fighting and rescue work, and repair and restoration of flood control works, and of federally-authorized shore protection structures. The authority does not extend to reimbursement of local expenditures for flood fighting or for post-flood repairs and improvement. The Corps encourages proper non-Federal maintenance or protective works and advance preparation for emergencies, including stockpiling of material and training of personnel. Non-Federal cooperation for emergency rehabilitation work under P.L. 99 is required substantially as for regular flood control projects. Special cooperation is required for repairs which provide better projects or eliminate local maintenance deficiencies.

24. Disaster Assistance by Corps of Engineers. The President, pursuant to the Federal Disaster Act of 1950 (P.L. 875, 81st Congress), declares "major disasters." The Corps of Engineers may be called upon

by the Office of Emergency Planning (OEP) to participate in disaster assistance under the P.L. 875 program, which supplements available assistance under other statutory authority. The authority of the OEP National Director has been delegated to OEP Regional Directors. Authority to respond to an OEP request has been delegated by the Chief of Engineers to Division Engineers. Under P.L. 875 local authorities request Federal assistance through State channels to the appropriate OEP Regional Director. Corps participation in P.L. 875 disaster assistance usually consists of debris removal, and emergency repair or temporary replacement of public facilities and other protective works essential to the preservation of life and property. It may include aid to State and local authorities in developing project applications, making initial determination of eligibility (subject to OEP certification) and reimbursing State and political subdivisions for eligible work done by them. In cases of imminent necessity, the Corps may take immediate action to save human life, prevent human suffering or mitigate great destruction or damages to property. Such action may be taken in a disaster not warranting P.L. 875 action, or prior to such action. Authority for such action stems from the statutory authority of the Corps for flood fighting and rescue operations, or the established policies and practices of the Corps and the Department of the Army.

FOR THE CHIEF OF ENGINEERS:

MILES L. WACHENDORF
Colonel, Corps of Engineers
Executive

DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314

IN REPLY REFER TO

ENGCW-P

25 March 1971

SUBJECT: Late Stage Public Meetings

1. Reference is made to EC 1120-2-55 on Public Meetings in Planning, dated 1 September 1970, and to ENGCW-PD letter thereon, dated 3 September 1970.

2. We are encountering increasing difficulty in reviewing and coordinating reports on planning studies for which there have been no timely late stage public meetings. This situation also complicates project implementation. Accordingly, action by the Board of Engineers for Rivers and Harbors is being held up on three recently submitted reports which have shortcomings in this regard, and the reporting officers are being required to hold public meetings even though the public notices have been issued.

3. Reports which do not comply with EC 1120-2-55, particularly paragraph 6a(3) on late stage public meetings, should not be submitted for review to the Board of Engineers for Rivers and Harbors nor should public notices thereon be issued. Additionally, for those studies where there have been no recent late stage public meetings and there are indications that public acceptance may have changed materially or that further public views should be sought, a further late stage public meeting will be held. Similarly, a further meeting will be held in those cases where there have been substantive changes in the tentative plan previously presented. In all cases, however, where no structural improvements by the Corps of Engineers are to be recommended, late stage public meetings will be held only at the discretion of the reporting officers, giving appropriate consideration to public participation aspects, unusual circumstances, and other pertinent factors.

FOR THE CHIEF OF ENGINEERS:

F. P. Koisch

F. P. KOISCH
Major General, USA
Director of Civil Works

S - 28 Feb 71

DEPARTMENT OF THE ARMY
Office of the Chief of Engineers
Washington, D. C. 20314

EC 1120-2-55

ENGCW-PD

Circular
No. 1120-2-55

1 September 1970

EXPIRES 30 JUNE 1971

INVESTIGATION, PLANNING AND DEVELOPMENT OF WATER RESOURCES

Public Meetings in Planning

1. Purpose. This circular sets forth the policy, responsibility, and guidance for holding formally organized and announced public meetings in connection with all Civil Works planning activities.

2. Applicability. The circular applies to all Corps of Engineers installations and elements having Civil Works planning responsibilities.

3. References. ER 1135-2-5.

4. Definition. As used herein, the terms "public meeting" and "announcement of public meeting" are synonymous with the previously used terms "public hearing" and "notice of public hearing", and do not include informally organized meetings which may also be open to the public. These changes in terminology apply only to Civil Works planning activities, in keeping with this circular. The intent is to introduce a change in tone to encourage sincere, meaningful two-way communication.

5. Purposes of Public Meetings. It is the policy of the Chief of Engineers to conduct his Civil Works program in an atmosphere of public understanding, trust, and mutual cooperation. All interested parties are to be informed and afforded an opportunity to be fully heard and their views considered in arriving at conclusions, decisions, and recommendations in the formulation of civil works proposals, plans, and projects. Public meetings provide the principal means of accomplishing this objective. Thus, the purposes of public meetings are to inform interested parties about studies and proposals related to water resources development; to give them an opportunity to freely, fully, and publicly express their views concerning such studies and proposals; to obtain factual information to assist in arriving at sound conclusions and recommendations; and to contribute to interagency coordination.

a. The first purpose requires that interested parties receive sufficient information to understand how their interests are affected by the problems and proposals under consideration; to determine what factual material information is available to them and where it can be obtained; and to formulate alternative proposals when appropriate.

This circular supersedes Section IX of EM 1120-2-101, 12 Oct 1964

b. The second purpose is important both for the substance of the views expressed and for the satisfaction of an interested party that his case has been heard. The opinions expressed may also reveal situations or sources of dissent, controversy, or support, and help to delineate areas of conflict or misunderstanding which need to be resolved, if possible.

c. The third purpose is to obtain factual information as distinct from opinion, although facts may often be better obtained by other means. A meeting can, however, contribute to verification of facts obtained elsewhere. The information to be obtained could relate to problems, needs, potential solutions, or other matters that might not be known to the Corps.

d. As a fourth purpose, public meetings also have value in coordinating studies with other Federal and non-Federal agencies.

6. Holding of Public Meetings. Public meetings will be held when needed, in keeping with the policy and purposes stated herein. They will be held generally as follows:

a. For specifically authorized planning studies:

(1) An initial meeting early in the course of each study, primarily to advise on the nature and scope of the study and to open lines of communication.

(2) A formulation stage meeting during the course of each study when all alternative solutions are reasonably known but before a plan has been tentatively selected. A meeting at this stage is critical, and its scheduling and conduct will be given careful attention in all instances.

(3) A late stage meeting before report completion, once a solution has been tentatively selected. In the event that, due to the nature of the study, the formulation stage meeting was, in effect, also a late stage meeting and the proposed plan was a foregone conclusion at that meeting, a third meeting may be dispensed with. However such dispensation will require specific approval by the Chief of Engineers, and the request therefor must clearly demonstrate that no residual requirement is being imposed on the Board of Engineers for Rivers and Harbors.

(4) Prior to final action by the Board of Engineers for Rivers and Harbors when non-Federal interests request such public meetings in their response to the announcement of the public release of the field report and the Board decides favorably on such requests. Normally, there will be no need for such meetings if adequate meetings have been held by the reporting officers.

b. For all planning studies under continuing authorities. At least one meeting will be held during the course of each study. The number and timing of the meetings is left to the discretion of the reporting officer.

c. In all special situations where either the public or the Corps, or both, would benefit by the exchange of views and information. Possibilities include situations of unusual time lapse or unexpected developments since the last public meeting, unusual interest or controversy, and advance planning of authorized projects.

7. Conduct of Public Meetings. Public meetings will normally be chaired by the senior officer in view of the importance of these meetings and the need to foster public participation and good public relations. When necessary, he will designate a suitable representative. The meetings may be held jointly with other agencies when desirable. All public meetings will be a fair and impartial two-way communication. As such, they will be as informal and simple as possible, and make as much use as they can of uncluttered graphics, slides, and displays.

a. At the beginning of a meeting, the presiding officer will explain the general purposes of public meetings and the specific situation or reason for the one being held. Subsequently, he will, as appropriate, present the problems and needs under study, the status of pertinent plans, programs, and improvements, the programs or improvements desired by non-Federal interests, the formulation of a plan or solution which considers all appropriate measures and is not limited to considerations of Federal construction measures, participation and coordination in such formulation, plan accomplishments and effects, both advantageous and disadvantageous, and Federal and non-Federal responsibilities. In discussing formulation, national objectives can be cited as well as technical and economic criteria and environmental and other considerations. All plausible alternatives should be mentioned and commented upon, however infeasible in the specific case. In particular, participation by others in the study and coordination will be explained to clearly demonstrate the cooperative nature of the effort.

b. Following the presiding officer's statement, all interested parties will be given an opportunity to be heard. All communications received to be placed into the meeting record will also be read or summarized to the extent practicable.

8. Arrangements for Public Meetings. Interested Members of Congress will be consulted regarding an appropriate time and place for meetings, their intent to participate, and their knowledge of responsible persons to be informed of the meetings. Preliminary contacts will be made to obtain participation by persons and organized groups, including those with conservation and environmental interests, whose local knowledge renders their

opinion of value, and to obtain a fair cross section of opinion, both pro and con. Meetings will be held in the locality or localities most convenient to the people of the area under investigation, and local convenience will be recognized in selection of the place, date, and hour. In the case of public meetings by the Board of Engineers for Rivers and Harbors, such meetings may be held in Washington, D. C. if the Board considers this more advantageous to the purpose of the meeting. When Board public meetings are held in the field, the appropriate field office will act as liaison, make all pertinent arrangements, and carry out all the usual meeting activities as requested by the Board.

9. Advice to Non-Federal Interests. Good public relations practices will be observed and, to the extent practicable, local interests will be advised to organize their case so that all pertinent aspects of their problem may be rapidly and effectively presented. In particular, interested parties will be requested to submit detailed factual data on the justification of their requests. Any information suitable for written transmission to the public to clarify the issues for interested parties, assist them in preparing factual material and expressions of views or opinions, and indicate possible alternative courses of action should be supplied to them in advance of a meeting. Without such advance information, local interests will often be unable to contribute in full measure to the meeting and they may feel that their views have not been adequately considered. Insofar as practicable, advice and advance information to interested parties should be presented in the announcement.

10. Announcements of Public Meetings. Announcements of public meetings will be issued under the letterhead of the issuing office, dated, and signed by the senior officer concerned. In the case of preauthorization studies, they should be similar to the guide wording in Appendix A, tailored to fit the situation and status of the study. More drastic adaptation will be needed for special meetings or situations. In any event, the guide wording should not be unreasonably adhered to. Moreover, the announcements should be written in layman's language and be informative and inviting in format and content. Their tone should reflect a sincere intent to produce a mutual exchange of views and information. In this regard, the announcements should in all cases avoid implications that final decisions have been made.

11. Distribution of Announcements. Announcements of public meetings will be distributed directly to all interested parties and agencies, including the press, about one month in advance of the meeting. They may be inserted as an advertisement subject to the requirements for authority to advertise as prescribed in ER 1180-1-1. Copies will also be supplied to Postmasters and other agencies where they may be posted for public information. Distribution will be accomplished from a prepared distribution

list for which up-to-date records will be kept of parties or agencies desiring copies of announcements. Distribution of the announcement will include the following, who will also be furnished one copy of the distribution list:

	Quantity
Members of Congress concerned (One copy of announcement and list to home address, and one copy of each to Washington, D. C., office) (Members of Congress will be listed under a heading "Congressional," with Senators in order of seniority, grouped by States, first, followed by Representatives in same manner. Seniority is based upon latest period of continuous service and can be determined from the Congressional Directory.)	2
Chief of Engineers (Attn: ENGCW-PD)	5
Governor or designated representative of States affected	1
Board of Engineers for Rivers and Harbors	1
Coastal Engineering Research Center (Only for meetings concerning shore protection and restoration)	1
Division Engineer	2

12. Record of Meeting. A complete record of the proceedings of public meetings will be taken stenographically or by electrical transcription, and a written record will be made therefrom. Study reports sent by reporting officers to the Board of Engineers for Rivers and Harbors will be accompanied by one copy of the pertinent written record, including the announcement and list of persons notified. The Board will forward these materials to the Chief of Engineers upon completion of Board action on the report. In all other cases, the materials will be supplied to the Chief of Engineers in one copy at the time of submission of a study report or other primary document on the subject for which the meeting was held. The records of lengthy or involved meetings will be accompanied by digests. Copies of the record for representatives of other agencies participating in joint meetings will be supplied in accordance with any arrangements made by them with the responsible senior officer. Local interests will be advised of their prerogative to arrange for copies of the record at the cost of reproduction.

13. Joint Public Meetings. Representatives of other Federal agencies or non-Federal public agencies may actively participate in joint public meetings whenever such organizations have a particular interest and express a desire to participate. Notification of a desire to participate and the subsequent designation of a participant should be accomplished officially by written communications from a high level. It should be understood that the agency representative designated should be knowledgeable in the subject of the meeting, that the Corps of Engineers is responsible for arrangements and procedure, that the meeting will be conducted by the Corps presiding officer, and that the meeting will be reasonably limited to Corps purposes for the meeting. If the participating agency's interest requires extension of the meeting or additional meetings, the additional expense will be the responsibility of that agency.

14. Funding. The expense of public meetings will be charged to the pertinent program, project, or study, except for BERH public meetings which will be charged to BERH funds.

15. Mandatory Recommendations. This circular will be revised for issuance as a regulation at a later date. Division Engineers will furnish their comments and recommendations for revision, ATT: ENGCW-PD (Mr. Pointon), by 28 February 1971. Recommendations should cover the appendix also, and drafts of additional appendices may be furnished. Annotated, edited, or rewritten copies of the circular clearly showing comments or recommended revisions may be included. Comments are invited on any pertinent aspect of the circular, including joint meetings, formal distribution lists, numbers of copies of statements to be submitted for the record, digests, furnishing of records, and funding.

FOR THE CHIEF OF ENGINEERS:

J B Newman
J. B. NEWMAN
Colonel, Corps of Engineers
Executive Director of Civil Works

1 Appendix
Guide Wording for
Announcement

APPENDIX A

GUIDE WORDING FOR ANNOUNCEMENT OF PUBLIC MEETING ON A PREAUTHORIZATION STUDY

* * * * * * * * * * * * *

ANNOUNCEMENT OF PUBLIC MEETING ON (For) ----(indicate purpose, study, and study area)

MEETING TO BE HELD AT ______ P.M., E.S.T.
ON (Date) ______
IN AUDITORIUM OF ______
______ (Street Address) ______
______ (City and State) ______

The Congress of the United States has directed the Corps of Engineers to make a study of the (describe study and its purpose, and identify study area). This requirement is contained in the ______ (identify and cite or paraphrase appropriate acts or resolutions, or portions thereof).

In order that the study may be responsive to the desires and needs of affected or interested parties, a public meeting will be held as indicated above. The purpose of this meeting is to exchange information concerning the study, the water resource and related problems involved, and possible solutions. A map of the study area is attached. Information is also sought on ecological and environmental conditions and problems in the study area.

Generally known problems and needs consist of ______ (very briefly list problems and needs, status of existing plans and improvements, improvements desired, and possible solutions, tailored to suit the situation and status of the study.)

All interested parties are invited and urged to be present or represented at this meeting, including respresentatives of Federal and non-Federal public agencies; agricultural, commercial, industrial, business, transportation, and utilities interests; civic, ecological and environmental, boating, recreation, and fish and wildlife organizations; and interested or concerned citizens, property owners, and other interests. All parties will be afforded full opportunity to express their views and furnish specific data on matters pertinent to the study, including technical, economic, and ecological and environmental material. Statements should be supported by factual information insofar as practicable. (Identify matters or data on which information is particularly being sought.)

Oral statements will be heard but, for accuracy of record, all important facts and statements should be submitted in writing, in duplicate. Written statements may be handed to the presiding officer at the meeting or may be mailed beforehand to the undersigned at the Corps of Engineers address in the letterhead. Statements so mailed should indicate that they are in response to this announcement. All statements, both oral and written, will become part of the official written record on this study and will be made available for public examination.

Final selection of a plan for recommendation to higher authority will be made only after full consideration is given to the views of responsible agencies, groups, and citizens. However, this cannot be taken as an indication that the Federal Government will undertake any improvements or programs. Although the study may result in recommendations for undertakings by the Federal Government, their accomplishment would depend upon subsequent authorization and funding by the U. S. Congress.

Please bring this announcement to the attention of anyone you know who is interested in this matter.

DEPARTMENT OF THE ARMY
Office of the Chief of Engineers
Washington, D. C. 20314

EC 1165-2-100

ENGCW-P/ENGPA/
IWRAP

Circular
No. 1165-2-100

28 May 1971

EXPIRES 30 MARCH 1972

WATER RESOURCES POLICIES AND AUTHORITIES
Public Participation in Water Resources Planning

1. Purpose. To specify objectives, policies, procedures, responsibilities and other information relevant to the systematic development, conduct and evaluation of public participation programs in Corps' water resources planning activities.

2. Applicability. All Corps of Engineers' installations with civil works planning responsibilities.

3. References. Appendix C includes a Bibliography of applicable Corps' directives and important references relating to public participation.

4. Definition. Public Participation is a continuous, two-way communication process which involves: (a) promoting full public understanding of the processes and mechanisms through which water resources problems and needs are investigated and solved by the Corps; (b) keeping the public fully informed about the status and progress of studies and the findings and implications of plan formulation and evaluation activities (essentially "Public Information"); and (c) actively soliciting from all concerned citizens their opinions and perceptions of objectives and needs, and their preferences regarding resource use and alternative development or management strategies, and any other information and assistance relevant to plan formulation and evaluation.

5. Background.

a. A growing amount of interest and concern relating to public participation in federal planning and decision-making is being expressed by the President, the Congress, and the public in general. In essence, the concern focuses on the view that federal program procedures are not sufficiently responsive to an expressed demand by the public to be actively involved.

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b. This concern represents less an indictment of past performance than an indication of changing patterns of social structure and an accompanying desire for participation in decision-making by a growing number of diversified interests. In this regard, the Chief of Engineers has noted:

> In the past we have conducted our planning activities with a relatively small percentage of the people who have actually been concerned, and these were Federal, state and local government officials of one kind or another. Today there are, in addition, vast numbers of private citizens who, individually, or in groups and organizations and through their chosen representatives, are not only keenly interested in what we are doing with the Nation's water resources but who want to have a voice and influence in the planning and management of those resources...we cannot and must not ignore (these) other voices....*

c. The Chief has made the Corps' position clear on this problem:

> I consider public participation of critical importance to the Corps' effectiveness as a public servant. It is...an area I won't be satisfied with until we can truly say that the Corps is doing a superb job.*

d. This will not be an easy task, for public participation must confront squarely the considerable problem of identifying and weighing people's values, attitudes and preferences. It is clear that there are no simple formulas for success, but there is one prerequisite--the sincere desire and willingness to seek out and take into account all interests and points of view and, in so doing, to put our own values, attitudes and preferences in proper perspective.

6. Program Objectives. The basic objectives of all Corps of Engineers' public participation activities are as follows:

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* Remarks by LTG F. J. Clarke, Chief of Engineers, before the Short Course on Public Participation in Water Resources Planning, Atlanta, Georgia, 2 Feb 71.

a. To insure that solutions to water resources problems satisfy the needs and preferences of the people to the maximum degree possible within the bounds of local, state and federal interests, responsibilities and authorities.

b. To seek a clear consensus among concerned citizens and their official representatives by facilitating the resolution of a controversy.

c. To build public confidence and trust in Corps' planning and in Corps' planners.

7. Program Policy. In order to accomplish these objectives the Corps will:

a. Present information which will assist the public in defining its water resources problems, needs, objectives and priorities, and in understanding Corps' planning responsibilities and the planning process and how they can participate effectively in it.

b. Develop channels through which the public can express its perceptions of problems, needs and priorities, and its preferences regarding resource use alternatives and corresponding development or management strategies.

c. Provide structured opportunities for the public to influence the formulation of planning and management alternatives, clarify and weigh conflicts, and achieve consensus regarding a course of action.

d. Actively promote effective coordination between Corps' planning and the plans and programs of other federal, state and local agencies.

8. Responsibilities. All public participation programs for planning activities will be developed, conducted and evaluated jointly by planning and PAO personnel under the overall direction and management of planning.

9. Program Planning Requirements. Public participation plans:

a. Will be an integral part of each Plan of Survey. Detail, including identification of resource requirements, should be consistent with other parts of the Plan of Survey.

b. Will be developed for all on-going preauthorization survey studies. The scope of such programs and the amount of "backtracking" activities required must be determined on the basis of local considerations. Increases in study costs of more than ten percent resulting from these activities should be explained and forwarded, through channels, to OCE (Attn: ENGCW-P) for approval, with copy to IWRAP.

c. Should be considered for post-authorization planning studies whenever there are substantive changes from the authorized plan, new interests are affected or changed conditions warrant such action.

d. Are not required for studies conducted under special continuing authorities (reference ER 1165-2-101). However, consideration should be given to an appropriate degree of public participation in each study.

10. Program Planning Instructions.

a. Public participation must be viewed as an integral part of the planning process.

b. There is no single best approach to public participation. Program plans must be tailored to the particular "publics" concerned, the relevant information requirements, the overall planning situation and, of course, the time, resources and skills available, including those that can be contributed by local interests and outside consultants. Therefore, in each district each individual plan will undoubtedly be somewhat different in detail. In the final analysis, the detail and scope of programs developed must be based upon the experience and judgment of those responsible for program planning and implementation. Once developed, program plans must continuously be evaluated and adjusted to changing requirements.

c. Public participation program plans should be planned systematically, in accordance with basic program objectives and policy as defined in paragraphs 6 and 7 above. The steps outlined below are suggested as a disciplined approach to program planning. Clearly, the steps are not completely mutually exclusive and, thus, cannot be accomplished in strict sequential order.

(1) Step I: Appendix A contains a generalized, simplified model of the Corps' planning process. For each step in the planning process

identify two-way information requirements (outputs and feedback) as clearly as possible. An example of this type of analysis is also included in Appendix A.

(2) Step II: For each step in the planning process, identify the relevant publics. A number of categories are listed in Appendix B. Within each basic category applicable to a specific study, identify systematically each group, organization, agency, individual, etc. which should be contacted. This is a continuing process.

(3) Step III: In terms of needs and publics as identified in Steps I and II, select carefully those public participation program elements (e.g., news releases and other uses of media, mailings, telephone, personal contacts, meetings (formal and informal), workshops, advisory committees, etc.) which appear to be most suitable, efficient and effective in terms of the specific situation. Consider costs, time requirements, capabilities of local personnel to apply the approaches effectively, and other factors relating both to the Corps and the publics involved. (Note: program elements required by existing Corps' directives, e.g., public notices, public meetings, etc., will continue to be employed. However, each office is encouraged to be innovative and imaginative in their formulation and application.)

d. Care must be exercised in developing program plans to assure that the overall district program is properly balanced in terms of the relative importance of studies, and that resources are not overcommitted. With respect to individual studies, a balance should be achieved between all aspects, including public participation. Necessary shifts in emphasis between study components should be considered as applicable.

11. Program Review. Each public participation program will be discussed concisely in the survey report. The review should comprise a summary of the programs in terms of what and how much was done, which publics were involved and to what extent, and any significant highlights, accomplishments or breakdowns. Supporting information should be included as necessary. As applicable, similar information should be included in reports submitted under special continuing authorities.

12. Program Evaluation.

a. District programs will be periodically evaluated by OCE (ENGCW-P and ENGPA) in coordination with IWR.

b. The following information should be submitted to OCE (Attn: ENGCW-P) with a copy to the Institute for Water Resources (Attn: IWRAP), at any time on an optional basis:

(1) Any "Model" plans, particular approaches, new innovations or other aspects of programs which proved particularly effective or ineffective (describe what happened or didn't happen and why).

(2) Any particularly favorable or unfavorable experiences which should be shared with others.

(3) Any needs for changes in policies, procedures, guidelines or information relating to public participation or other aspects of the planning process, as the result of experience.

(4) Suggestions for research, testing, training and development.

(5) Suggestions for references which should be included in a public participation Bibliography (see Appendix C).

c. As applicable, the above information will be distributed and/or utilized in modifying program guidance.

13. Program Development and Testing.

a. All offices to which this circular applies should exercise initiative and innovation in formulating and testing approaches to encouraging and supporting public participation.

b. If possible, innovations should be pre-tested before implementation. Each approach should be carefully evaluated continuously to assure that it is both efficient and effective in meeting needs.

c. OCE, in cooperation with IWRAP, will be responsible for monitoring the development, conduct and evaluation of formal research programs relating to public participation.

d. ENGCW-P, ENGPA and IWR(AP) will, as resources and capabilities permit:

(1) Provide, on request, assistance and support to field offices in the development, conduct and evaluation of local programs.

(2) Monitor and/or participate in the field testing and evaluation of particularly promising approaches. Offices interested in participating in such an arrangement should contact IWRAP.

14. Additional Information. During the coming year the requirements of this circular and other existing directives relating to public participation will be evaluated against changing needs and experience, modified as necessary, and integrated into one or more Engineer Regulations in accordance with the provisions of EC 1120-2-60, "New System of Planning Directives," dated 16 November 1970. In addition, IWR will proceed with the development of an Engineer Pamphlet on the subject of public participation which will contain detailed information and guidelines relating to public participation program planning, conduct and evaluation.

FOR THE CHIEF OF ENGINEERS:

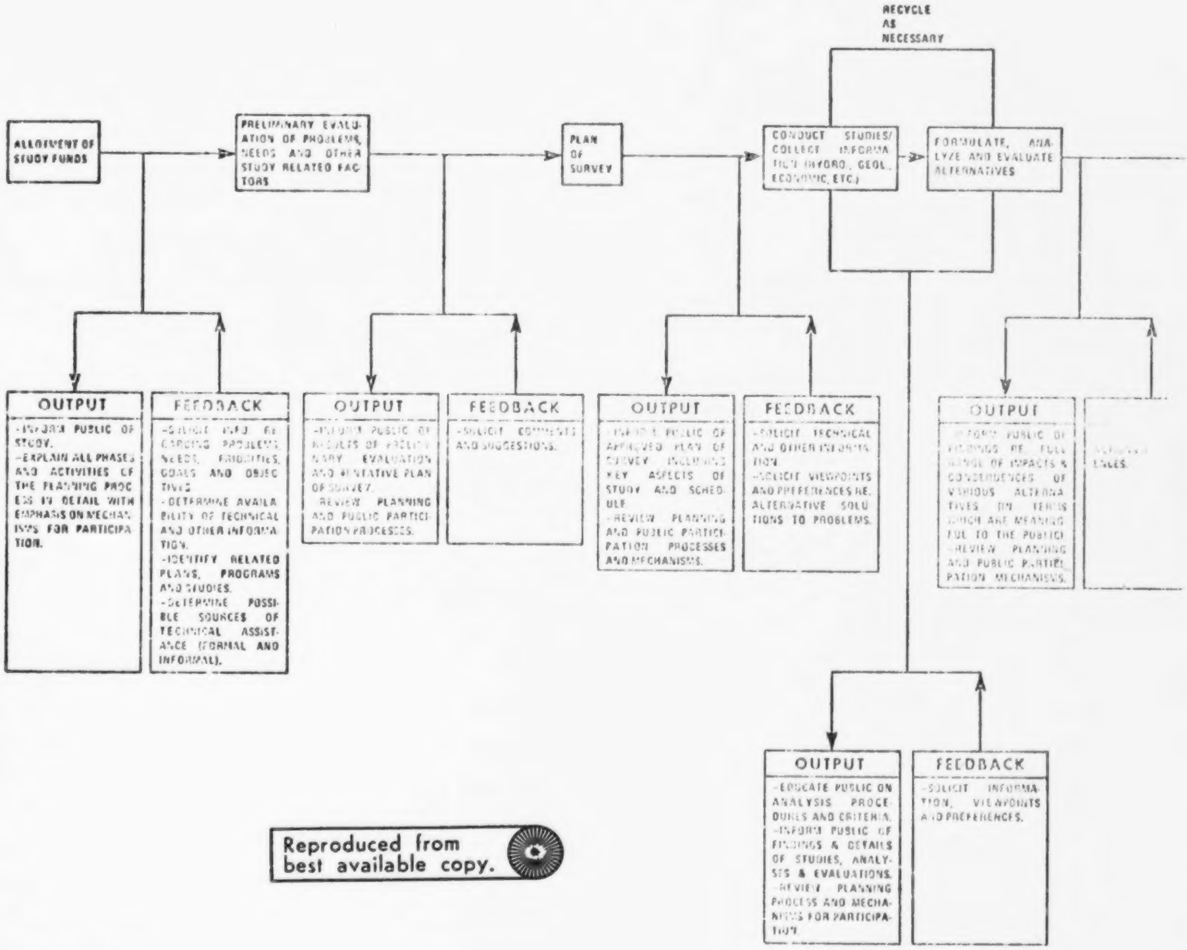
J B Newman
J. B. NEWMAN
Colonel, Corps of Engineers
Executive Director of Civil Works

3 Appendices
APP A Plng Process & Info. Requirements
APP B The Publics
APP C Bibliography

APPENDIX A

PLANNING PROCESS AND INFORMATION REQUIREMENTS

Public participation plans will be developed within the framework of the overall planning process. This Appendix includes a generalized, simplified flow chart model of a typical Corps planning process. It is included for illustrative purposes only. The process should be expanded or otherwise modified as necessary to reflect local requirements. Examples of the identification of some of the basic information requirements for several steps are also included (see paragraph 10c(1) of the basic EC). It should be noted that particular emphasis is put on educating the public about the planning process and mechanisms for public participation. This is extremely important and should be stressed throughout the process. A comprehensive identification of requirements should be made for each study.


RECYCLE AS NECESSARY
ALLOTMENT OF STUDY FUNDS
PRELIMINARY EVALUATION OF PROBLEMS, NEEDS AND OTHER STUDY RELATED FACTORS
PLAN OF SURVEY
CONDUCT STUDIES/ COLLECT INFORMATION (HYDRO., GEOL., ECONOMIC, ETC.)
FORMULATE, ANALYZE AND EVALUATE ALTERNATIVES
OUTPUT
-INFORM PUBLIC OF STUDY.
-EXPLAIN ALL PHASES AND ACTIVITIES OF THE PLANNING PROCESS IN DETAIL WITH EMPHASIS ON MECHANISMS FOR PARTICIPATION.
FEEDBACK
-SOLICIT INFO. REGARDING PROBLEMS, NEEDS, PRIORITIES, GOALS AND OBJECTIVES.
-DETERMINE AVAILABILITY OF TECHNICAL AND OTHER INFORMATION.
-IDENTIFY RELATED PLANS, PROGRAMS AND STUDIES.
-DETERMINE POSSIBLE SOURCES OF TECHNICAL ASSISTANCE (FORMAL AND INFORMAL).
OUTPUT
-INFORM PUBLIC OF RESULTS OF PRELIMINARY EVALUATION AND TENTATIVE PLAN OF SURVEY.
-REVIEW PLANNING AND PUBLIC PARTICIPATION PROCESSES.
FEEDBACK
-SOLICIT COMMENTS AND SUGGESTIONS.
OUTPUT
-INFORM PUBLIC OF APPROVED PLAN OF SURVEY INCLUDING KEY ASPECTS OF STUDY AND SCHEDULE.
-REVIEW PLANNING AND PUBLIC PARTICIPATION PROCESSES AND MECHANISMS.
FEEDBACK
-SOLICIT TECHNICAL AND OTHER INFORMATION.
-SOLICIT VIEWPOINTS AND PREFERENCES RE. ALTERNATIVE SOLUTIONS TO PROBLEMS.
OUTPUT
-INFORM PUBLIC OF FINDINGS RE. FULL RANGE OF IMPACTS & CONSEQUENCES OF VARIOUS ALTERNATIVES IN TERMS WHICH ARE MEANINGFUL TO THE PUBLIC.
-REVIEW PLANNING AND PUBLIC PARTICIPATION MECHANISMS.
ENCES.
OUTPUT
-EDUCATE PUBLIC ON ANALYSIS PROCEDURES AND CRITERIA.
-INFORM PUBLIC OF FINDINGS & DETAILS OF STUDIES, ANALYSES & EVALUATIONS.
-REVIEW PLANNING PROCESS AND MECHANISMS FOR PARTICIPATION.
FEEDBACK
-SOLICIT INFORMATION, VIEWPOINTS AND PREFERENCES.

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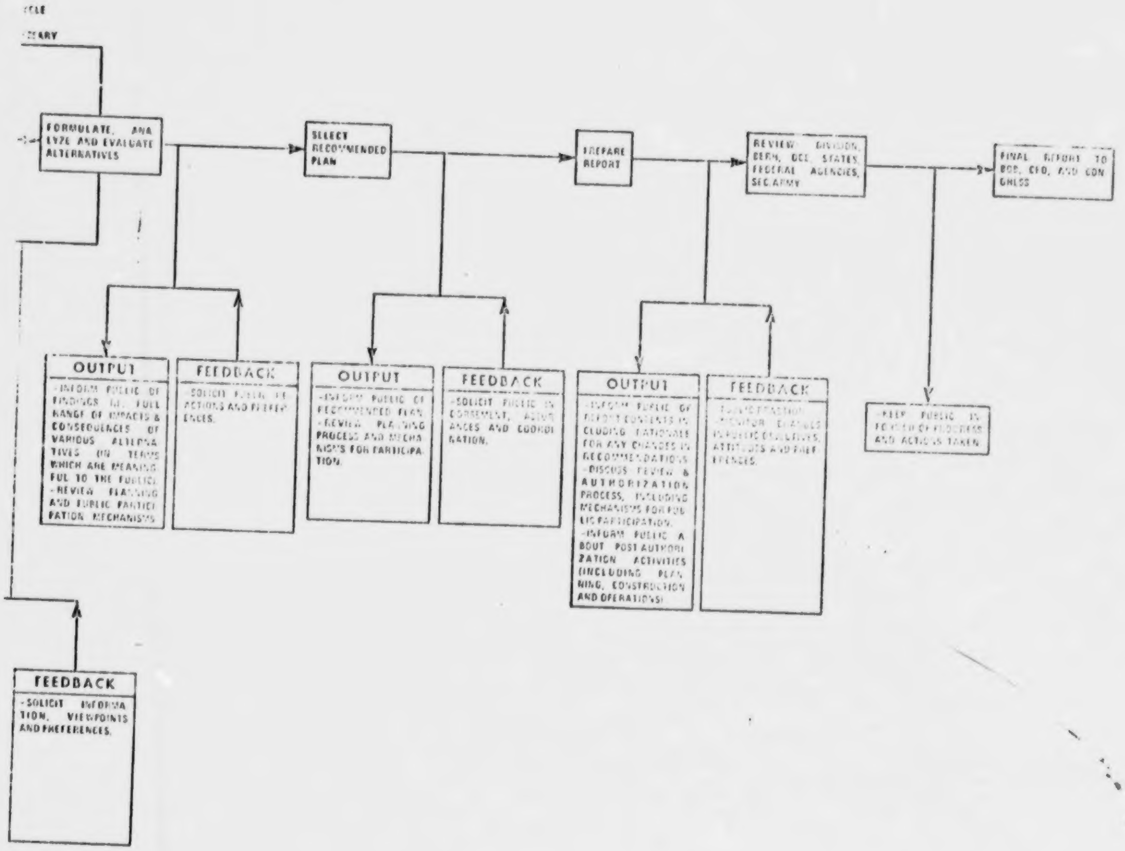
FORMULATE, ANALYZE AND EVALUATE ALTERNATIVES
SELECT RECOMMENDED PLAN
PREPARE REPORT
REVIEW: DIVISION, BERH, OCE, STATES, FEDERAL AGENCIES, SEC ARMY
FINAL REPORT TO BOB, CEQ, AND CONGRESS
OUTPUT
-INFORM PUBLIC OF FINDINGS IN FULL RANGE OF IMPACTS & CONSEQUENCES OF VARIOUS ALTERNATIVES IN TERMS WHICH ARE MEANINGFUL TO THE PUBLIC.
-REVIEW PLANNING AND PUBLIC PARTICIPATION MECHANISMS
FEEDBACK
-SOLICIT PUBLIC REACTIONS AND PREFERENCES.
OUTPUT
-INFORM PUBLIC OF RECOMMENDED PLAN.
-REVIEW PLANNING PROCESS AND MECHANISMS FOR PARTICIPATION.
FEEDBACK
-SOLICIT PUBLIC INDORSEMENT, ASSURANCES AND COORDINATION.
OUTPUT
-INFORM PUBLIC OF REPORT CONTENTS INCLUDING RATIONALE FOR ANY CHANGES IN RECOMMENDATIONS
-DISCUSS REVIEW & AUTHORIZATION PROCESS, INCLUDING MECHANISMS FOR PUBLIC PARTICIPATION.
-INFORM PUBLIC ABOUT POST AUTHORIZATION ACTIVITIES (INCLUDING PLANNING, CONSTRUCTION AND OPERATIONS)
FEEDBACK
-SOLICIT REACTION
-MONITOR CHANGES IN PUBLIC OBJECTIVES, ATTITUDES AND PREFERENCES.
-KEEP PUBLIC INFORMED OF PROGRESS AND ACTIONS TAKEN.
FEEDBACK
-SOLICIT INFORMATION, VIEWPOINTS AND PREFERENCES.

APPENDIX B

THE PUBLICS

1. Outlined below is a basic categorization of "publics."

2. These categories should be reviewed and modified as necessary in accordance with the needs of individual studies.

3. Selection of specific groups, organizations and individuals within each category should be as broad and representative as possible in terms of including those who are or might be affected by or concerned about the plan.

4. Existing relationships should be continued, but communication should not be limited to those groups, organizations and individuals traditionally dealt with or those concerned only with water resources. Water resources development impacts broadly on people with different philosophies and points of view and on plans, programs and aspirations of other agencies, groups, organizations and individuals. Public participation must reflect this broad impact. Every effort should be made to identify and bring into the process influential groups and individuals (those who do or can significantly influence decisions as well as those who actually make them). Local, regional and national aspects should be considered. The working list of individuals, groups and organizations should be continuously reviewed and updated as studies progress.

5. Basic Categories (including additional guidance as applicable):

a. Individual Citizens. This includes the general public and key individuals who do not express their preferences through or participate in any of the groups or organizations listed below.

b. Sportsmen's Groups.

c. Conservation/Environmental Groups.

d. Farm Organizations.

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e. Property Owners and Users. To the extent that they can be clearly identified, property owners that might be displaced by any alternative which is being studied in detail should be encouraged to participate. Property and homeowner associations and user groups not identified elsewhere should also be identified.

f. Business-Industrial. Chambers of Commerce and selected trade and industrial associations should be involved. Business firms substantively affected by any alternative being studied in detail should be notified and encouraged to participate.

g. Professional Groups and Organizations. Consider local chapters of national organizations (e.g., American Medical Association, American Institute of Planners, American Society of Civil Engineers, etc.).

h. Educational Institutions. Include universities, high schools, vocational schools. Give particular attention to key faculty members and groups and to student groups and organizations.

i. Service Clubs and Civic Organizations. Women's organizations (League of Women Voters, American Association of University Women, Garden Clubs, etc.); Lions, Kiwanis, Rotary, etc.

j. Labor Unions.

k. State-Local Agencies. Include Planning Commissions, Development Authorities, Councils of Government, OEO-Community Action Agencies, etc.

l. State and Local Elected Officials.

m. Federal Agencies.

n. Other Groups and Organizations. Consider Urban League, Urban Coalition, Consumer Groups, economic opportunity groups, political clubs and associations, ACLU, minority groups, religious groups and organizations, other social action groups, etc.

o. Media. Staffs of newspapers, radio, television, house organization and trade organs, etc.

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APPENDIX C

BIBLIOGRAPHY

This Bibliography includes selected references to official documents and other information relevant to the planning, conduct and evaluation of public participation programs. Additional information will be provided from time to time on a continuing basis.

1. Corps of Engineers' Directives

ER 360-1-1, Public Affairs, 31 Jul 70
ER 360-1-8, Notification, Members of Congress and State Governors, 20 Dec 65
ER 360-2-10, Information Pamphlets, 24 Apr 67
ER 360-2-15, State Pamphlets, 23 Nov 65
EC 1120-2-55, Public Meetings in Planning, 1 Sep 70
EM 1120-2-101, Survey Investigations and Reports - General Procedures, 12 Oct 64
ER 1120-2-112, Coordination of Survey Reports with Metropolitan Planning Agencies, 11 Apr 69
ER 1135-2-5, Civil Works Activities, 14 Apr 67
ER 1165-2-15, Federal-Local Conferences, 20 Apr 67
ER 1165-2-500, Environmental Guidelines for the Civil Works Program of the Corps of Engineers (including Appendix A - IWR Report 70-5), Nov 70

2. Other Corps of Engineers' Publications

OCE Multiple Letter, Subject: "Public Participation in Civil Works Activities," dated 19 Mar 71
"The Susquehanna Communication-Participation Study," IWR Report 70-6, Dec 70
"Public Participation in Water Resources Planning," IWR Report 70-7, Dec 70

3. Other Publications

See Bibliographies in IWR Reports 70-6 and 70-7 (above).

League of Women Voters, Education Fund, The Big Water Fight, Stephen Green Press, 1966

National Wildlife Federation, Conservation Directory, Wash., D. C., 1971 (available for $1.50 from National Wildlife Federation, 1412 16th Street, N. W., Wash., D. C.). This publication contains comprehensive lists of national, state, regional and local conservation and related agencies and organizations and their leaders.

Straayer, John (ed), Focus on Change: Intergovernmental Relations in Water Resources Planning, Policy Science Paper #1, Department of Political Science, Colorado State University, Fort Collins, Colorado, Jan 70 (this is a "Proceedings" of a Corps of Engineers-sponsored seminar and was distributed to all Corps of Engineers' installations).

Water Resources Council, Handbook for Coordination of Planning Studies and Reports, Wash., D. C., Jun 69

Water Resources Council, "Water and Related Land Resources Planning - A Policy Statement," Wash., D. C., 22 Jul 70

4. Ongoing Programs

The Seattle and Rock Island Districts are developing and testing several approaches to public participation which have proven quite effective thus far. Inquiries relating to these programs should be addressed to the respective districts.*

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* Highly recommended.

30 Jun 71
S - 9 Jul 71
15 Jul 71
1 Sep 71

EC 1165-2-98

DEPARTMENT OF THE ARMY
Office of the Chief of Engineers
Washington, D. C. 20314

ENGCW-PV/KW/OC

Circular
No. 1165-2-98

28 May 1971

EXPIRES 31 DECEMBER 1971
WATER RESOURCES POLICIES AND AUTHORITIES
Preparation and Scheduling of Environmental Statements

1. Purpose. The purpose of this circular is to transmit a draft of ER 1105-2-507, "Preparation and Coordination of Environmental Statements," for interim guidance and review comments, and to request information concerning the schedule and submission of environmental statements for authorized Civil Works projects.

2. Applicability. This circular is applicable to all Divisions and Districts having civil works functions.

3. Procedure.

a. Draft of ER 1105-2-507. The inclosed draft of ER 1105-2-507 (Appendix A), provides interim guidance for preparation and submission of environmental statements pending clearance of the proposed procedures with the CEQ and issuance in final form. The draft should be carefully reviewed and your comments thereon furnished this office, Attention. ENGCW-PV, to arrive no later than 9 July 1971.

b. Schedule of Environmental Statements. Information requested below on the status of environmental statements is required for a current analysis of field activities in this area and for compilation of an overall status report to accompany the Fiscal Year 1973 budget submission to the Office of Management and Budget. Guidelines for submission of these data follow:

(1) Format. Attached as Appendix B is the format to be used in preparing your schedule for submission of environmental statements.

(2) Categories. A separate report will be prepared for various categories of projects as outlined below:

(a) Potential new start projects under the "Continuing Authorities Projects" program for which detailed project reports have been prepared or are essentially completed.

(b) Construction and Land Acquisition Projects Not Yet Started. A subdivision for: (1) Construction and (2) Land Acquisition should be provided.

(c) Request for Initiation of Construction and Land Acquisition for FY 1973. A subdivision for: (1) Construction and (2) Land Acquisition should be provided.

(d) Continuing Construction and Operation and Maintenance. With reference to para 5.e. of the inclosed draft ER, District and operating Divisions will prepare a schedule of the plan for submission of environmental statements for this category of projects for the 3-year time period. For the first year of this plan, a detailed schedule will be provided in the form of Appendix B, inclosed. This detailed schedule will be subdivided to show subcategories of (a) Continuing Construction and Land Acquisition (with a further subdivision between these two subcategories) and (b) Operation and Maintenance. Listings of those projects for which environmental statement will be scheduled for submission in the second and third year periods will also be submitted. These listings should be subdivided for each year to show continuing construction, land acquisition, and operation and maintenance separately. Under this plan, a project now in the late stages of construction may have an environmental statement scheduled for submission at a future time when the project will be in an operation and maintenance status. Such a project should be listed in the category appropriate to the time of scheduling submission of the environmental statement. In the event of a changed category, the project should be identified by a parenthetical remark reading: "Presently in construction category."

(3) Report Submission. Reports on schedules for submission of environmental statements should be submitted marked to the attention of ENGCW-OC. The report for categories (2)(a), (2)(b), and (2)(c) above should be submitted to reach OCE no later than 30 June 1971; for category (2)(d): (Exempt, para 7-2b, AR 335-15.)

(a) A first phase report providing a listing of the projects considered probable for inclusion in the first year submission. This report should be submitted to reach OCE no later than 15 July 1971.

(b) A second phase report providing for the first year submission projects, as finalized, the data specified by Appendix B. This report will also include listings for the second and third year plans. The second phase report on category (2)(d) above project will be submitted to reach OCE no later than 1 September 1971.

4. Submission Priorities.

a. Priorities. In preparation of the 3-year plan for projects in category 3(2)(d), priorities for early preparation will be given to those projects having the greatest impact on the environment and those projects where scheduled actions are such as to preclude the possible adoption of alternative plans. In applying the latter criteria in determining priorities, whenever practicable considering overall capabilities for preparation of environmental studies and statements, statements should be filed well in advance of taking actions which would tend to preclude adoption of alternatives. (See paragraph 10(b) of CEQ "Guidelines.")

b. Schedules. Schedules for projects in category 3(2)(d), should be developed after consulting appropriate Federal, State, and local agencies and considering known views of the interested public. The public will be informed that the schedule is being developed as a step in the systematic review of the environmental impact of all Corps activities. After completion the schedule will be made available to the public and furnished to citizens and conservation and environmental groups with known interests in the environmental considerations of the projects on the lists.

5. Additional Guidance Required. The superficiality of the present guidance toward adequately handling the actual environmental issues and associated ecological impacts is recognized. Development of even framework guidance on these subjects is proceeding slowly due to the inadequate state of knowledge, professional disagreement over major ecological issues, present staff limitation, and the relative newness of the current and accelerating thrust of environmental concerns. Information and guidance will, however, be provided via separate Engineer Circulars at the earliest date possible on the concepts and methodologies appropriate to identification of primary and secondary environmental impacts, evaluation of consequences of such impacts (including trade-off analysis), environmental inventories, ecological baseline studies, and environmental monitoring systems and procedures.

FOR THE CHIEF OF ENGINEERS:

J B Newman
J. B. NEWMAN
Colonel, Corps of Engineers
Executive Director of Civil Works

2 Appendices
APP A Draft ER 1105-2-507, "Preparation of Environmental Statements"
APP B Schedule of Environmental Statements

ENGCW-PV

DEPARTMENT OF THE ARMY
Office of the Chief of Engineers
Washington, D. C. 20314

ER 1105-2-507

Regulation
No. 1105-2-507

28 May 1971

INVESTIGATIONS, PLANNING AND DEVELOPMENT OF WATER RESOURCES
Preparation and Coordination of Environmental Statements

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Appendix A - Executive Order 11514, "Protection and Enhancement of Environmental Quality," March 5, 1970 (35 F. R. 4247, March 7, 1970)
Appendix B - "Guidelines for Statements on Proposed Federal Actions Affecting the Environment," Council on Environmental Quality (36 F. R. 7724, April 23, 1971)
Appendix C - Preparation of Environmental Statements
Appendix D - Format Samples on Environmental Statements
Appendix E - Flow Charts on Chronology Regarding Preparation and Coordination of Environmental Statements

ENGCW-PV

DEPARTMENT OF THE ARMY
Office of the Chief of Engineers
Washington, D. C. 20314

ER 1105-2-507

Regulation
No. 1105-2-507

28 May 1971

INVESTIGATION, PLANNING AND DEVELOPMENT OF WATER RESOURCES

Preparation and Coordination of Environmental Statements

1. Purpose. This regulation provides guidance for preparation and coordination of Environmental Statements as required by Section 102(2)(C) of the National Environmental Policy Act of 1969 (PL 91-190). The procedures described in this regulation are consistent with the Council on Environmental Quality Guidelines for Statements on Proposed Federal Actions Affecting the Environment, dated 23 April 1971.

2. Applicability. This regulation applies to all elements of the Corps of Engineers with civil works responsibilities for planning, development, and management of water resource developments and is applicable to both pre-authorization and post-authorization project activities.

3. References:

a. ER 1165-2-500, "Environmental Guidelines for the Civil Works Program of the Corps of Engineers," 30 November 1970.

b. National Environmental Policy Act of 1969 (PL 91-190) (83 STAT. 852).

c. Executive Order 11514, "Protection and Enhancement of Environmental Quality," 5 March 1970 (35 F. R. 4247, March 7, 1970) (copy inclosed as Appendix A).

d. Guidelines for Statements on Proposed Federal Actions Affecting the Environment, Council on Environmental Quality (36 F. R. 7724, April 23, 1971) (Inclosed as Appendix B).

4. Policy. In formulating water resource development or management plans, impact on the environment will be fully considered from the initiation of pre-authorization planning through post-authorization planning, construction, and project operation and management. Early and continuing efforts in cooperation with appropriate local, State and Federal agencies and the interested public, will be undertaken to develop alternatives and measures which will enhance, protect, preserve, and restore the quality of the environment or, at least, minimize and mitigate unavoidable deleterious effects. Preparation of the environmental statement required by the Act will constitute an integral part of the pre-authorization process. The statement will serve as a summation of evaluations

of the effects that alternative actions would have on the environment and as an explanation and objective evaluation of the finally recommended plan.

a. Compliance and Review. Prior to forwarding, environmental statements (including comments and views of agencies, groups, and the public) will be carefully reviewed by District and Division Engineers to insure that:

(1) The [illegible] satisfies the requirements of this regulation and the references cited herein.

(2) The proposed [illegible] described in the statement is fully consistent with [illegible] enunciated in the National Environmental Policy Act, ER [illegible] other pertinent directives which have implemented the Act.

b. Further Guidance. If after taking all measures within his authority, the District or Division Engineer is unable to satisfy the requirements of paragraph 4a Compliance and Review, above, he will report the matter to the Chief of Engineers, Attention: ENGCW, and request the necessary authority or guidance.

c. Operation, Maintenance, and Management. In the development of plans for operation, maintenance, and management activities, all possible significant [illegible] will be considered. Such consideration [illegible] of available resources when the proposed O&M [illegible] the quality of the environment, curtail the beneficial uses of the environment, or serve short-term purposes to the disadvantage of long-term environmental goals. Typical examples of these activities which could have an adverse impact on the environment are as follows:

(1) Disposal of dredged material in wetlands or marshlands.

(2) Disposal of polluted dredged material in unconfined or open water areas.

(3) Debris collection and disposal activities.

(4) Resource management programs involving the cutting, sale and/or disposal of forest resources; extensive plant disease eradication; predator or vector control; and aquatic plant control.

[illegible] environmental benefits must be sacrificed [illegible] environmental benefits or economic

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considerations, e.g. undesirable drawdown to provide water for power and for downstream water quality control.

(6) Leases, licenses, rights-of-way, administrative permits, and other actions involving use by others of project resources.

d. Regulatory Permits. In evaluating permit applications, the responsible Federal officer will carefully evaluate the impact on the environment of the proposed action considering environmental information provided by the applicant, all advice received from Federal, State and local agencies, and comments of the public. If the Federal officer believes that granting the permit may be warranted but could lead to significant environmental degradation, an environmental statement will be prepared.

5. Agency Actions Requiring Statements. The following types of Corps of Engineers actions will require the preparation of an environmental statement by reporting officers. For those actions not identified in this paragraph, reporting officers should request further guidance from the Chief of Engineers, Attention: ENGCW. Where environmental statements have been previously filed and are older than three years or have significant changes in the proposal or associated environment, the statement will be updated, coordinated and transmitted to the CEQ.

a. Legislation. Recommendations or reports to the Congress on proposals for legislation affecting Corps of Engineers programs including proposals to authorize projects (survey, review, and comprehensive reports and legislation).

b. Continuing Authorities. Recommendations or reports on proposals for authorization of projects by the Chief of Engineers or the Secretary of the Army under special authorities, including detailed Project Reports prepared under the following special continuing authorities:

(1) Section 205, 1948 FCA, as amended (33 U.S.C 701s).

(2) Section 107, 1960 R&HA, as amended (33 U.S.C. 577).

(3) Section 103, 1962 R&HA, as amended (33 U.S.C. 426g).

(4) Section 2, 1937 FCA, as amended (33 U.S.C. 701g).

(5) Section 3, 1945 R&HA, as amended (33 U.S.C. 603a).

(6) 1909 R&HA, as amended (33 U.S.C. 5).

c. Construction or Land Acquisition Not Started. Initiation of construction of land acquisition on projects which are not yet started but for which funds have been appropriated or are provided by the current FY Appropriation Act.

d. Requests for Initiation of Construction or Land Acquisition. Budget submissions requesting funds for the initiation of construction or land acquisition on authorized projects.

e. Continuing Construction and Land Acquisition, and Operation and Maintenance. The National Environmental Policy Act of 1969 requires an environmental statement in those instances where a major Federal action has a significant impact upon the environment. It is the desire of the Chief of Engineers, though not required by the Act, to conduct a systematic review of all Corps projects and to have environmental statements prepared for all projects with impacts that may be considered significant for any reason. In recognition of the heavy workload immediately imposed upon District Engineers through this requirement, it is proposed that statements on these projects be submitted over a span of three years. This program contemplates the early submission of statements on those projects of highest priority and so graduated that those of lowest priority will be the last to be submitted. In determination of the priority ranking of projects under this requirement, those projects having the greatest impact upon the environment and those projects where scheduled actions are such as to preclude the possible adoption of alternative plans will be considered highest in priority. A project can be exempted from this three year schedule requirement if a statement has already been filed that is less than three years old by the time of the President's budget submission and no significant changes have taken place in the proposal or the associated environment.

f. Regulatory Permits. Issuance of permits for structures, dumping, or other actions in navigable waters of the United States whenever any of the Federal, state or local agencies which are authorized to develop and enforce environmental standards certify, or the District Engineer determines, that the action which it is proposed to permit would have a significant and adverse affect on the quality of the environment. This regulation does not apply to requirements for environmental statements of Federal leases for oil drilling to be done on the outer continental shelf; Corps permits for such drilling are confined to findings on the effect of this activity on navigation and on national security; inquiries concerning environmental considerations will be referred to the Federal leasing agency. See 33 CFR, Chapter II, Part 209.131 "Permits for Discharges or Deposits Into Navigable Waters."

g. Cooperative Shore Protection Projects. Where the non-Federal agency will accomplish the construction, a final environmental statement will be on file with CEQ prior to advertisement of the work. The statement will be prepared by the District Engineer, following the guidance provided by this regulation. In the event the non-Federal agency desires to prepare the draft environmental statement, copies will be furnished the District Engineer, who will review the statement and, if it is suitable, proceed with coordination and further processing.

h. Regulatory Control of Project Resources. Certain administrative actions regarding utilization of Corps of Engineers project resources have the potential of significantly affecting the environment. These actions are normally initiated by outside parties and involve a lease, license, permit, easement, or other entitlement for use. An environmental statement will be prepared for these actions which may include: leasing of project lands for industrial uses, airports, etc.; requests for rights-of-way for overhead utilities, pipelines, roads and highways; mineral extractions such as sand, gravel, rock, etc., or any other proposed use of project resources which could degrade the quality of the environment. Where an environmental statement is deemed not necessary because there will be no adverse effects, this finding will be included in the transmitting report to higher authority.

i. Disposal of Lands for Port and Industrial Uses. For disposal of surplus project lands for development of port and industrial facilities pursuant to Section 108 of River and Harbor Act of 1960 (PL 86-645) (74 Stat. 487) (33 U.S.C 578), District Engineers will prepare an environmental statement and process it with the proposed action to higher authority.

j. Exclusions. Specifically excluded from the required preparation of environmental statements are the emergency flood control, shore protection, and disaster recovery actions performed by the Corps of Engineers pursuant to its statutory authority under Public Law 99-84th Congress (69 Stat. 186), Emergency Bank Protection for Highways, Highway Bridge Approaches and Public Works (Sec 14, 1946 Flood Control Act) (60 Stat. 641) (33 USC 701r), or as directed by the Office of Emergency Preparedness under the provisions of Public Law 91-606 (84 Stat. 1744).

6. Budget Submission Data. The time requirements for submission of environmental statements as set forth below, have been established with a view to meeting, to the maximum extent, the requirements specified by the Council on Environmental Quality. (See paragraph 10(c) of the CEQ "Guidelines.")

a. Requests for Initiation of Construction and Land Acquisition. For budget recommendations in this category, final environmental statements must have been transmitted to CEQ by 1 September of the calendar year in which the budget is being submitted by Division and District Engineers.

b. Requests for Continuing Construction and Land Acquisition and Operation and Maintenance Activities. With reference to paragraph 5e, for those projects on which environmental statements are selected for submission under the first year of the three-year schedule, final statements will have been submitted to CEQ not later than 1 January 1972, with the statements scheduled for the second and third years being planned for submission by 1 September 1972 and 1973, respectively.

c. Listings. The annual budget recommendations of Division Engineers will provide a listing of projects recommended in each budget category indicating the time of actual or scheduled submission of the final environmental impact statements to the CEQ.

7. General Considerations.

a. Environmental Statements. The environmental statement is an independent report summarizing the direct and indirect environmental impacts of a proposed water resources development project or other proposal, taking into consideration the detailed appraisal and analysis of Federal and state agencies with jurisdiction by law or special expertise with respect to environmental impacts and public concerns with particular emphasis on conservation and environmental action groups. Environmental statements will be based on the considerations discussed below, the CEQ "Guidelines," Appendix B and the guidance contained in Appendix C. Statements will:

(1) Describe environmental impacts sufficiently to permit evaluation and independent appraisal of the favorable and adverse environmental effects of the recommended proposal and each alternative. They will be simple and concise, yet include all pertinent facts. In no case will possible adverse effects be ignored or slighted in an attempt to justify an action previously recommended or currently supported. Similarly, care must be taken to avoid overstating either favorable or unfavorable effects.

(2) Discuss significant relationships between the proposal and other existing and anticipated developments. This will include not only Corps proposals but actions by others, either public or private, which will affect the impact of the project or will be affected by the project. These will include both specific proposals and general trends.

(3) Discuss the significance of the regional and national environmental impact of the project, as applicable. Conclusions should be supported with information indicating the relative scarcity or abundance of the environmental resources in question and other factors bearing on regional and national significance.

(4) Be submitted as separate documents, not as inclosures or appendices to other documents such as pre-authorization survey reports or design memoranda. However, statements will bring together and summarize the various findings of other documents with respect to environmental considerations.

(5) Not be used to resolve conflicts or to present unsupported conclusions, but should demonstrate that the Corps has fully considered the potential impact of the proposal upon the environment. The statement will summarize information and cite sources of overall appraisals and responsible judgments of complex environmental matters and interrelationships (e.g., water quality by EPA, fish and wildlife resources by BSF&WL or other authoritative sources).

(6) Contain objective analyses and normally avoid the use of project cost figures but should include approximate monetary or other cost comparisons of alternatives which illustrate different environmental impacts and economic or social trade-offs necessary to achieve environmental objectives.

(7) Summarize comments and/or recommendations of an environmental nature by appropriate Governmental agencies.

(8) Summarize formal views and recommendations received from organizations and individuals with an environmental resource interest. Presentation will be in a subsection under "Coordination With Others."

(9) Be reviewed by District Counsel to assure legal responsiveness to the Act.

(10) Be prepared in simple and concise terms with the understanding that they are - or will be - public documents and may receive broad exposure in the news media and careful public scrutiny. Where the use of technical terms is necessary, they should be adequately defined. Length would depend upon the nature of the impacts and the environmental setting of a particular proposal.

(11) Contain the comments of the Environmental Protection Agency with respect to water quality aspects of the proposed action, which have been previously certified by the appropriate state or interstate organization as being in substantial compliance with applicable water quality standards.

(12) Contain a description of the proposed action including information and technical data adequate to permit a careful assessment of environmental impacts by commenting agencies. Project maps will be included.

b. Planning Relationships.

(1) In the development of new projects or proposals, environmental considerations will be integrated into the planning process from the beginning. Preliminary identification and assessment of possible

environmental impacts and effects will be made and fully discussed at early stages in the study. Consultation and coordination with Federal, state and local agencies which have jurisdiction by law or special expertise and the interested public with respect to the environmental impacts involved will be started as soon as these impacts are tentatively identified and will continue throughout the planning process. Reporting officers will insure that such consultation has been sufficient to identify all significant impacts prior to circulation of environmental statements, including preliminary drafts.

(2) On projects which were recommended, authorized or under construction prior to the National Environmental Policy Act of 1969, the opportunity to study and evaluate a full range of alternatives may be more limited. However, to the maximum extent feasible, alternative solutions and opportunities for environmental enhancement, preservation, restoration, and mitigation will be investigated prior to preparation of the statement. Regardless of the level at which formal coordination is to take place, reporting officers will carefully examine and evaluate the environmental impact of all reasonable alternatives in coordination with appropriate Federal, state and local agencies and the public prior to preparing a recommendation or an environmental statement, whether preliminary draft, draft or final.

8. Public Participation.

a. Policy. Public participation will be incorporated into the conduct of the Corps water resources program and must be viewed as an integral part of the planning process. Public participation is a continuous two-way communication process which involves: keeping the public fully informed about the status and progress of studies and findings of plan formulation and evaluation activities; and actively soliciting from all concerned citizens their opinions and perceptions of objectives and needs, and their preferences regarding resources use and alternative development or management strategies, and any other information and assistance relevant to plan formulation and evaluation. Specific guidance on the implementation of public participation is being developed.

b. Pre-authorization Project Studies. In each project study, all possible means (formal and informal) will be emphasized to establish and maintain effective two-way communications with interested citizens and conservation and environmental groups. Public meetings, informal meetings and workshops with the project area and the use of news media are means to develop this free-flowing dialog to assist in the identification of the environmental concerns and develop appropriate measures within the proposed plan to mitigate, eliminate, or reduce environmental impacts. Unresolved environmental conflicts must be clearly set forth with a full and complete discussion of both sides of the issue. The general public and participating conservation environmental groups should be kept fully and continuously informed about impacts and be provided with opportunities to make inputs.

(1) During the second public meeting or formulation stage meeting, all anticipated environmental impacts and effects of each solution under consideration will be identified and discussed. There will be prepared an environmental information section or inclosure to the public meeting announcement in order to generate meaningful and thorough discussion during the meeting. Views of interested citizens and conservation and environmental groups will be sought and considered.

(2) A preliminary draft environmental statement will be prepared for the third or late stage public meeting and will be summarized in the Notice of Public Meeting and with reference to how copies may be obtained. The environmental discussion regarding the proposal and alternatives will be specific and thorough regarding the environmental impacts and effects. Views of interested citizens and conservation and environmental groups will be sought and considered.

c. Post-authorization Project Studies. Public participation will be developed for post-authorization planning studies whenever there are substantive changes from the authorized plan.

d. Public Review. During the review of the environmental statement by Federal, state and local agencies, copies of the preliminary draft and draft statement will be made available to groups which actively participated in the study, to citizen and conservation and environmental groups with known interests in the environmental considerations of the project, and in response to requests from the general public. To insure public awareness during this process, action offices will prepare and publish a news release on the proposed action, stating that a copy of the preliminary draft or draft environmental statement has been prepared and is available upon request. This news release should be given as wide a coverage as deemed sufficient to accomplish the purpose of this directive and the intent of paragraph 6a(vii) and 10 of the "Guidelines" of the CEQ. When significant environmental impacts or public concern have become apparent subsequent to the last public meeting, reporting officers will notify the Division Engineer of the facts and issues involved and request a decision as to whether a public meeting should be held prior to or during coordination of the statement.

9. Coordination. Existing coordination procedures will be utilized in obtaining the views of Federal, state and local agencies to the maximum extent practicable concerning the review of preliminary draft and draft environmental statements.

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a. Time Limits. Reporting officers should establish time limits of not less than 45 days for reply, after which it may be presumed, unless the agency requests a specific extension of time, that the agency consulted has no comment to make. In exceptional cases, where time is a very critical factor, time limits of 30 days may be established. To the fullest extent possible, no administrative action will be taken, regarding the proposal, sooner than 90 days after a draft environmental statement has been circulated for comment, or sooner than 30 days after a final environmental statement has been made available to CEQ.

b. Federal Agencies.

(1) Appendix 2, CEQ "Guidelines" will be used to determine the Federal agencies with jurisdiction by law or special expertise to whom the statement is to be sent for comment on the environmental impacts.

(2) Section 8 of CEQ Guidelines, reference d, requires that, in addition to normal coordination procedures, the following rules apply to coordination with the Environmental Protection Agency (EPA):

(a) Comments of the Administrator or his designated representative will accompany each final statement on matters related to air or water quality, noise control, solid waste disposal, radiation criteria and standards, or other provisions of the authority of EPA.

(b) Copies of basic proposals (studies, proposed legislation, rules, leases, permits, etc.) will be furnished to EPA with each statement. For actions for which statements are not being prepared but which involve the authority of EPA, EPA will be informed that no statement will be prepared and that comments are requested on the proposal.

(c) A period of 45 days will be allowed for EPA review of statements and/or proposals; however, it will be presumed that the agency has no comments to make only when the impacts or matters related to the authorities of EPA are minor or the agency has indicated that it does not desire to comment.

c. State and Local Agencies. Coordination of the environmental statement with state and local agencies authorized to develop and enforce environmental standards may be obtained directly with the agencies and with the appropriate state, regional or metropolitan clearinghouse unless the Governor has designated some other point for obtaining this review. For additional guidance see ER 1120-2-112, "Coordination of Investigations and Reports with Clearinghouses."

10. Availability of Environmental Statements. Draft and final environmental statements including comments received during review will be made available to the public to the greatest extent practicable in accordance with paragraph 3 of this regulation, Section 2(b) of Executive Order 11514, "Protection and Enhancement of Environmental Quality," paragraph 10 of the CEQ "Guidelines" and the following:

a. Draft Environmental Statements. The District Engineer will furnish copies of draft environmental statements in response to requests from the public and will furnish public information file copies to the Division office and the appropriate state, regional and metropolitan clearinghouses. Copies will also be on file in the Office of the Chief of Engineers.

b. Final Environmental Statements. After the final environmental statement has been filed with CEQ, the District Engineer will furnish copies, including comments, in response to requests from the public and furnish on an expedited basis, public information file copies to the appropriate state, regional and metropolitan clearinghouses. Information copies will also be provided to all Federal, state, and local agencies' and conservation/environmental groups with which the statement was coordinated. This is to enable the public or Government agency to comment on the final statement to CEQ if they so desire, within the 30 day period prior to the administrative actions being taken. Copies will also be on file in the Office of the Chief of Engineers.

c. Number of Copies. In order to comply with paragraph 10(b) of CEQ "Guidelines" reporting officers will provide 30 copies of all draft environmental statements to OCE at the time formal coordination with responsible Federal, state and local agencies is initiated. When significant or controversial environmental issues are raised during the draft review process, 20 copies of the letters discussing the issues will be furnished OCE for transmittal to CEQ in advance of furnishing the final coordinated environmental statement. Thirty copies of the final coordinated statement will be furnished OCE for further processing to CEQ. OCE will notify Division and District Engineers when final statements are filed and will provide each with copies of the filed final statement.

11. Preparation and Processing. Statements will be prepared by the officer initially preparing the recommendation or report (normally the District Engineer). The initiating officer is recognized as the responsible Federal official within the meaning of section 102(2)(C) of PL 91-190, except for such changes as reviewing authorities may deem necessary in the original proposal and covering statement, to be consistent with the policies of the Secretary of the Army. Agency comments and the views expressed should be directed at the environmental impacts and should be no older than 12 months for new proposals nor older than three calendar years for previously authorized projects. More recent coordination will be required if significant changes in the proposal or in the associated environment have occurred in the meantime.

a. Survey Reports.

(1) An assessment of the environmental resources in the project area will be prepared by the environmental planners and presented at the

Checkpoint I Conference. This assessment will be based on the results of the environmental inventory (App. C, para 2 and 3) and will be the continuing reference document for the environmental planning in the survey report and the preparation of the environmental statement.

(2) The environmental assessment and an analysis of probable environmental impacts of the considered project alternatives will be presented at the formulation stage public meeting. The environmental presentation at this meeting will be made in a way that will: (a) lead to public understanding of the environmental setting in the proposed project area, and the environmental trade-offs under consideration; (b) be deserving of confidence that Corps planning is environmentally knowledgeable and responsive; and (c) obtain the reviews and comments of interested citizen and conservation and environmental groups.

(3) A preliminary draft statement (PDS) will be prepared before the late stage public meeting. The PDS will objectively present the anticipated impacts of the selected plan which may be recommended, but will also present in clear and concise terms the probable impacts of alternative plans considered during the study.

(4) The PDS, perhaps revised after the final public meeting, will be circulated to the agencies noted in paragraph 9, Coordination, for review and comment. The review period will be not less than thirty days. If any agency does not respond within the time specified, a comment to that effect will be included in the attached coordination letters section. Copies of the PDS will be furnished to groups which actively participated in the study, to citizen and conservation and environmental groups with known interests in the environmental considerations of the project. At the time of the circulation of the PDS for field level review the District Engineer will prepare and issue a news release stating that a copy of the preliminary draft environmental statement may be obtained from the District Engineer.

(5) After the return of field level review comments the District will prepare a final version of the PDS and this statement will accompany the District Report to the Division Engineer. Review comments of all agencies together with a summary of comments received from the public, will be attached to the PDS.

(6) The Division Engineer will give appropriate coverage to the PDS in the PUBLIC NOTICE and will review and comment on the PDS when he submits his report and statement to the Board of Engineers for Rivers and Harbors (BERH).

(7) BERH will review the PDS at the time it reviews the project report. BERH will note in the Board Report that it has reviewed the PDS of a certain

data and has considered the impacts discussed therein when developing the Views and Recommendations contained in the Board Report.

(8) After the review of the FDS at BERH and by OCE elements, the FDS will be converted into the draft statement at OCE. The draft statement will be circulated for review and comment to the appropriate state or states and the affected Federal agencies at the Washington level and known interested citizen, conservation and environmental groups and response to requests from the general public. The draft statement, together with all field level coordination comments, the Chief of Engineers Report, and the Board of Engineers for Rivers and Harbors Report will be provided CEQ by OCE at this time. The review period will be ninety days. The Public Affairs Office, OCE, will prepare and issue a news release stating that a copy of the draft environmental statement is available from the Office of the Chief of Engineers. Copies of the draft environmental statement will be furnished the Division and District Engineers. District Engineers will provide public information file copies to the appropriate state, regional and metropolitan clearinghouses.

(9) After termination of the review period the final environmental statement, incorporating all comments received, will be prepared at OCE in consultation with field offices and accompany the Chief's Report on the project to Office, Secretary of Army (OSA) for transmittal to Office of Management and Budget (OMB).

(10) After receipt of the OMB comments, OSA will transmit the final environmental statement to CEQ and Congress together with the project report. The Public Affairs Office, OCE, will prepare and issue a news release stating that a final environmental statement has been filed with CEQ and a copy is available from the Office of the Chief of Engineers. Mention in this news release should be made that copies are available at the Division and District Engineers' offices.

(12) Copies of final environmental statement will be furnished the agencies and organizations with whom the draft environmental statement was coordinated. Copies of the final environmental statement will be furnished the Division and District Engineers. District Engineers will provide public information copies to the appropriate state, regional and metropolitan clearinghouses.

b. Special Projects and Continuing Authorities. It is contemplated that all required consultation with Federal, state and local agencies, and the public concerning the environmental aspects will be accomplished at field level by District Engineers without further referral to any of these agencies by the Chief of Engineers.

(1) An assessment of the environmental resources in the project area will be prepared by the environmental planners and will be the

continuing reference document for the environmental planning in the project report and the preparation of the environmental statement.

(2) A draft statement will be prepared before the public meeting. The draft statement will objectively present the anticipated impacts of the selected plan which may be recommended but will also present in clear and concise terms the probable impacts of alternative plans considered during the study. The content of the draft statement will be summarized in the Notice of Public Meeting and discussed at the meeting.

(3) The draft statement, revised as applicable, after the public meeting, together with draft report, will be forwarded to OCE through the Division Engineer for concurrence of proposed action prior to coordination of report and statement.

(4) Appropriate comments on the report and draft statement will be made by OCE and the District Engineer requested to make the appropriate changes.

(5) After the changes in the report and draft statement are made, the District Engineer will circulate the draft statement for formal review and comment to appropriate Federal, state and local agencies, clearinghouses and known interested citizen, conservation and environmental groups and response to requests from the general public. Thirty copies of the draft statement will be furnished OCE for transmittal to CEQ. The review period may be as short as 30 days except 45 days will be allowed for EPA comment. This coordination starts the 90 day period before the administrative action can be taken. At the same time the District Engineer will prepare and issue a news release stating that a copy of the draft environmental statement may be obtained from the District Engineer.

(6) After other agency review comments and comments of the interested public are received, the District will prepare the final environmental statement and attach copies of all comments received. Thirty copies of the final environmental statement will be sent to the Division Engineer for further action.

(7) The Division Engineer will review and comment on the final environmental statement when he submits the report and statement to OCE.

(8) OCE will review and have revised the final environmental statement where necessary. Office, Secretary of Army will transmit the final environmental statement to the CEQ. This action will start the 30 day period before the action can be taken. The Public Affairs Office, OCE, will prepare and issue a news release stating that a final environmental statement has been filed with CEQ and a copy is available from the Office, Chief of Engineers and District Engineer.

(9) Copies of the final environmental statement will be furnished the Division and District Engineers. District Engineers will furnish copies of the final environmental statement to the agencies and organiations with whom the draft environmental statement was coordinated. District Engineers will also provide public information copies to the appropriate state, regional and metropolitan clearing houses.

c. *Authorized Projects Not Started*. It is contemplated that all required consultation with Federal, state and local agencies and the public concerning the environmental aspects will be accomplished at field level by District Engineers without further referral to any of these agencies by the Chief of Engineers. See paragraph 8, Public Participation, for guidance on holding public meetings in connection with preparation of statements for authorized projects.

(1) Prior to submittal of the General Design Memorandum, the District Engineer will update the environmental statement prepared when the project was authorized or prepare one if none has been prepared. For projects for which statements are required (Paragraph 5, *Agency Actions Requiring Environmental Statements*) and for which the GDM has been previously submitted, draft statements will be prepared as soon as possible. Preparation should be started at least nine months prior to the proposed action for which the statement is required in order to allow time for consultation with appropriate agencies prior to preparing the draft, preparation of the draft, and processing as indicated in the following sub-paragraphs.

(2) The updated statement or new draft will be circulated for formal review and comment to the appropriate Federal, state and local agencies, clearinghouses, and known interested citizen, conservation and environmental groups and response to requests from the general public. Thirty copies of the draft statement will be furnished OCE for transmittal to CEQ. This review period may in exceptional cases be as short as 30 days, except that 45 days will be allowed for EPA comments. This coordination starts the 90 day period before the administrative action can be taken. At the same time, the District Engineer will issue a news release stating that a copy of the draft environmental statement may be obtained from the District Engineer.

(3) After other agency review comments and comments of the interested public are received, the District will prepare the final environmental statement and attach copies of all comments received. Thirty copies of the final environmental statement will be sent to the Division Engineer for further action.

(4) The Division Engineer will review and comment on the final environmental statement when he submits the GDM (if appropriate) and statement to OCE.

(5) OCE will review and revise the final environmental statement where necessary. Office, Secretary of Army will transmit the final environmental statement to the CEQ. This action will start the 30 day period before the administrative action can be taken. The Public Affairs Office, OCE, will prepare and issue a news release stating that a final environmental statement has been filed with CEQ and a copy is available from the Office, Chief of Engineers and the District Engineer.

(6) Copies of the final environmental statement will be furnished the Division and District Engineers. District Engineers will furnish copies of the final environmental statement to the agencies and organizations with whom the draft environmental statement was coordinated. District Engineers will also provide information copies to the appropriate state, regional and metropolitan clearinghouses.

d. Operation and Maintenance and Continuing Construction. It is contemplated that all required consultation with Federal, state and local agencies, and the public concerning the environmental aspects will be accomplished at field level by District Engineers without further referral to any of these agencies by the Chief of Engineers.

(1) Paragraph 5e, page 4, establishes the requirements for preparation of environmental statements regarding Operation and Maintenance and Continuing Construction projects.

(2) The updated statement or new draft will be circulated for formal review and comment to the appropriate Federal, state and local agencies, clearinghouses, and known interested citizen, conservation and environmental groups and response to requests from the general public. Thirty copies of the draft statement will be furnished OCE for transmittal to CEQ. This review period may in exceptional cases be as short as 30 days, except that 45 days will be allowed for EPA comments. This coordination starts the 90 day period before the administrative action can be taken At the same time, the District Engineer will issue a news release stating that a copy of the draft environmental statement may be obtained from the District Engineer.

(3) After other agency review comments and comments of the interested public are received, the District will prepare the final environmental statement and attach copies of all comments received. Thirty copies of the final environmental statement will be sent to the Division Engineer for further action.

(4) The Division Engineer will review and comment on the final environmental statement when he submits the statement to OCE.

(5) OCE will review and revise the final environmental statement where necessary. Office, Secretary of Army will transmit the final environmental to the CEQ. This action will start the 30 day period before the action can be taken. The Public Affairs Office, OCE, will prepare and issue a news release stating that a final environmental statement has been filed with CEQ and a copy is available from the Office, Chief of Engineers and the District Engineer.

(6) Copies of the final environmental statement will be furnished the Division and District Engineers. District Engineers will furnish copies of the final environmental statement to the agencies and organizations with whom the draft environmental statement was coordinated. District Engineers will also provide information copies to the appropriate state, regional and metropolitan clearinghouses.

e. Permit Applications. For permit actions on which statements are required by paragraph 5f above, the preparation and coordination of an environmental statement will be accomplished at field level.

(1) The District Engineer will require the applicant to furnish information and an assessment of the environmental impacts of the proposed action.

(2) If a Public Hearing is required, an environmental assessment of the proposed action will be included in the PUBLIC NOTICE of HEARING and the environmental issues will be fully discussed by the applicant at the hearing.

(3) The District Engineer will prepare a draft environmental statement utilizing the information obtained from the various agencies and the public in response to the original public notice, the information provided by the applicant and the public hearing, if one was held.

(4) The draft statement will be circulated for formal review and comment to the appropriate Federal, state and local agencies, and known interested citizen, conservation and environmental groups and response to requests from the general public. Thirty copies of the draft statement will be furnished OCE for transmittal to CEQ. This review period may be as short as 30 days, except that 45 days will be allowed for EPA comments. This coordination starts the 90-day period before the administrative action can be taken. At the same time the District Engineer will issue a news release stating that a copy of the draft environmental statement may be obtained from the District Engineer.

(5) After other agency review comments and comments of the interested public are received, the District will prepare the final environmental statement and attach copies of all comments received. Thirty copies of

the final environmental statement together with the District Engineer's report and recommendations on the application as required by ER 1145-2-303 will be transmitted to higher authority for further action.

(6) If higher authority decision is favorable to the application, the Office, Secretary of Army will transmit the final environmental statement to the CEQ at least 30 days prior to approval of the application. The Public Affairs Office, OCE, will prepare and issue a news release stating that a final environmental statement has been filed with CEQ and a copy is available from the Office, Chief of Engineers and the District Engineer.

(7) Copies of the final environmental statement will be furnished the Division and District Engineers. District Engineers will furnish copies of the final environmental statement to the agencies and organizations with whom the draft environmental statement was coordinated. District Engineers will also provide information copies to the appropriate state, regional and metropolitan clearing houses.

(8) If higher authority decision is unfavorable to the application, the application together with the reasons for denial will be returned to the applicant. CEQ will be informed of the denial and that a final environmental statement will not be filed.

f. Disposal of Land for Port and Industrial Uses. When District Engineers determine that surplus project property may be disposed of for development of public port or industrial facilities is in the public interest, he will prepare an environmental statement to accompany his report and recommendation. It is contemplated that all required consultation with Federal, state and local agencies, and the public concerning the environmental aspects will be accomplished at field level by District Engineers without further referral to any of these agencies by the Chief of Engineers.

(1) The District Engineer will prepare a draft environmental statement utilizing information obtained from appropriate Federal, state and local agencies and probably new owners. A public meeting may be used to obtain information and views from the interested public. The statement will set forth, among other things, what the new owner intends to develop on the property and the possible uses to be made of it. Also, state what constraints will be placed on the owner, such as reversionary clause, uses, need for permits for structures or discharges into navigable waters.

(2) The draft statement will be circulated for formal review and comment to the appropriate Federal, state and local agencies, and known interested citizen, conservation and environmental groups and response to requests from the general public. Thirty copies of the draft statement will be furnished OCE for transmittal to the CEQ. This review period may be as short as 30 days, except that 45 days will be allowed for EPA comments. This coordination

starts the 90-day period before the administrative action can be taken. At the same time, the District Engineer will issue a news release stating that a copy of the draft environmental statement may be obtained from the District Engineer.

(3) After other agency review comments and comments of the interested public are received, the District will prepare the final environmental statement and attach copies of all comments received. Thirty copies of the final environmental statement together with the District Engineer's report and recommendations, as required by ER 405-1-909, will be transmitted to higher authority for further action.

(4) If higher authority decision is favorable to the request for disposal of project lands, the Office, Secretary of Army will transmit the final environmental statement to the CEQ at least 30 days prior to the issuance of the Public Notice of Disposal as required by paragraph 32c(2) of ER 405-1-909. The Public Affairs Office, OCE, will prepare and issue a news release stating that a final environmental statement has been filed with the CEQ and a copy is available from the Office, Chief of Engineers and the District Engineer.

(5) Copies of the final environmental statement will be furnished the Division and District Engineers. District Engineers will furnish copies of the final environmental statement to the agencies and organizations with whom the draft environmental statement was coordinated. District Engineers will also provide information copies to the appropriate state, regional and metropolitan clearinghouses.

(6) If higher authority decision is unfavorable to the request, the CEQ will be informed of the denial and that a final environmental statement will not be filed.

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12. Implementation. Officers in charge of elements described in paragraph 2 above, will modify planning and other procedures to insure compliance and implementation in a timely manner.

FOR THE CHIEF OF ENGINEERS:

RICHARD F. McADOO
Colonel, Corps of Engineers
Executive

5 Appendices
App A - Executive Order 11514, "Protection
and Enhancement of Environmental
Quality," March 5, 1970 (35 F. R. 4247, March 7, 1970)
App B - "Guidelines for Statements on Proposed
Federal Actions Affecting the Environment,"
Council on Environmental Quality
(36 F.R. 7724, April 23, 1971)
App C - Preparation of Environmental Statements
App D - Format Samples on Environmental Statements
App E - Flow Charts on Chronology Regarding
Preparation and Coordination of Environmental
Statements (To be furnished later.)

APPENDIX A

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Executive Order 11514. Protection and Enhancement of Environmental Quality. March 5, 1970

By virtue of the authority vested in me as President of the United States and in furtherance of the purpose and policy of the National Environmental Policy Act of 1969 (Public Law No. 91-190, approved January 1, 1970), it is ordered as follows:

SECTION 1. *Policy.* The Federal Government shall provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life. Federal agencies shall initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals. The Council on Environmental Quality, through the Chairman, shall advise and assist the President in leading this national effort.

SEC. 2. *Responsibilities of Federal agencies.* Consonant with Title I of the National Environmental Policy Act of 1969, hereinafter referred to as the "Act", the heads of Federal agencies shall:

(a) Monitor, evaluate, and control on a continuing basis their agencies' activities so as to protect and enhance the quality of the environment. Such activities shall include those directed to controlling pollution and enhancing the environment and those designed to accomplish other program objectives which may affect the quality of the environment. Agencies shall develop programs and measures to protect and enhance environmental quality and shall assess progress in meeting the specific objectives of such activities. Heads of agencies shall consult with appropriate Federal, State and local agencies in carrying out their activities as they affect the quality of the environment.

(b) Develop procedures to ensure the fullest practicable provision of timely public information and understanding of Federal plans and programs with environmental impact in order to obtain the views of interested parties. These procedures shall include, whenever appropriate, provision for public hearings, and shall provide the public with relevant information, including information on alternative courses of action. Federal agencies shall also encourage State and local agencies to adopt similar procedures for informing the public concering their activities affecting the quality of the environment.

(c) Insure that information regarding existing or potential environmental problems and control methods developed as part of research, development, demonstration, test, or evaluation activities is made available to Federal agencies, States, counties, municipalities, institutions, and other entities, as appropriate.

(d) Review their agencies' statutory authority, administrative regulations, policies, and procedures, including those relating to loans, grants, contracts, leases, licenses, or permits, in order to identify any deficiencies or inconsistencies therein which prohibit or limit full compliance with the purposes and provisions of the Act. A report on this review and the corrective actions taken or planned, including such measures to be proposed to the President as may be necessary to bring their authority and policies into conformance with the intent, purposes, and procedures of the Act, shall be provided to the Council on Environmental Quality not later than September 1, 1970.

(e) Engage in exchange of data and research results, and cooperate with agencies of other governments to foster the purposes of the Act.

(f) Proceed, in coordination with other agencies, with actions required by section 102 of the Act.

SEC. 3. *Responsibilities of Council on Environmental Quality.* The Council on Environmental Quality shall:

(a) Evaluate existing and proposed policies and activities of the Federal Government directed to the control of pollution and the enhancement of the environment and to the accomplishment of other objectives which affect the quality of the environment. This shall include continuing review of procedures employed in the development and enforcement of Federal standards affecting environmental quality. Based upon such evaluations the Council shall, where appropriate, recommend to the President policies of environmental quality and shall, where appropriate, seek resolution of significant environmental issues.

(b) Recommend to the President and to the agencies priorities among programs designed for the control of pollution and for enhancement of the environment.

(c) Determine the need for new policies and programs for dealing with environmental problems not being adequately addressed.

(d) Conduct, as it determines to be appropriate, public hearings or conferences on issues of environmental significance.

(e) Promote the development and use of indices and monitoring systems (1) to assess environmental conditions and trends, (2) to predict the environmental impact of proposed public and private actions, and (3) to determine the effectiveness of programs of protecting and enhancing environmental quality.

(f) Coordinate Federal programs related to environmental quality.

(g) Advise and assist the President and the agencies in achieving international cooperation for dealing with environmental problems, under the foreign policy guidance of the Secretary of State.

(h) Issue guidelines to Federal agencies for the preparation of detailed statements on proposals for legislation and other Federal actions affecting the environment, as required by section 102(2)(C) of the Act.

(i) Issue such other instructions to agencies, and request such reports and other information from them, as may be required to carry out the Council's responsibilities under the Act.

(j) Assist the President in preparing the annual Environmental Quality Report provided for in section 201 of the Act.

(k) Foster investigations, studies, surveys, research, and analyses relating to (i) ecological systems and environmental quality, (ii) the impact of new and changing technologies thereon, and (iii) means of preventing or reducing adverse effects from such technologies.

SEC. 4. *Amendments of E. O. 11472.* Executive Order No. 11472 of May 29, 1969, including the heading thereof, is hereby amended:

(1) By substituting for the term "the Environmental Quality Council", wherever it occurs, the following: "the Cabinet Committee on the Environment".

(2) By substituting for the term "the Council", wherever it occurs, the following: "the Cabinet Committee".

(3) By inserting in subsection (f) of section 101, after "Budget,", the following: "the Director of the Office of Science and Technology,".

(4) By substituting for subsection (g) of section 101 the following:

"(*g*) The Chairman of the Council on Environmental Quality (established by Public Law 91-190) shall assist the President in directing the affairs of the Cabinet Committee."

(5) By deleting subsection (*c*) of section 102.

(6) By substituting for "the Office of Science and Technology", in section 104, the following: "the Council on Environmental Quality (established by Public Law 91-190)".

(7) By substituting for "(hereinafter referred to as the 'Committee')", in section 201, the following: "hereinaftet referred to as the 'Citizens' Committee')".

(8) By substituting for the term "the Committee", wherever it occurs, the following: "the Citizens' Committee".

RICHARD NIXON.

THE WHITE HOUSE.

(F.R. Doc. 70-2861; Filed, Mar. 5, 1970; 2:29 p.m.)

(35 F.R. 4247, March 7, 1970)

EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
722 JACKSON PLACE, N. W.
WASHINGTON, D. C. 20006

APR 23 1971

MEMORANDUM TO THE HEADS OF AGENCIES

RE: Revised CEQ Guidelines on Environmental Impact Statements Prepared under Section 102(2)(C) of the National Environmental Policy Act

Attached are the Council's Revised Guidelines on environmental impact statements prepared under Section 102(2)(C) of the National Environmental Policy Act as published in the Federal Register. Also included (see section 8) are the Environmental Protection Agency's interim procedures under Section 309 of the Clean Air Act which requires review and public comment by EPA on certain proposed legislation and agency actions and regulations affecting EPA's areas of responsibility (air quality, water quality, solid waste, pesticides, radiation standards, noise).

The revisions in CEQ's guidelines apply to proposed agency actions for which draft environmental statements are circulated after June 30, 1971. Agencies are requested to update their procedures for handling environmental statements to take account of the revised CEQ guidelines prior to July 1. These updated agency procedures should be made available to the Council for consultation prior to formal issuance (Attention: General Counsel). The Council will invite the participation of OMB and EPA in this consultation.

In updating your Agency's procedures, your attention is directed in particular to the following:

(Section 3)
Agency procedures should provide guidance in identifying:

-- those types of agency actions requiring environmental statements

-- the appropriate time prior to decision for the interagency consultations required by Sec. 102(2)(C)

-- the agency "review process" for which the final environmental statement and comments are to be available.

Agency procedures should assure that advance comment from the Environmental Protection Agency is requested on proposed legislation, regulations, new construction projects and major actions significantly affecting the environment in the areas of EPA's jurisdiction (i.e. air and water quality, solid waste, pesticides, radiation standards, noise) (See section 2).

(Section 6)

(i) Environmental statements must include an adequate description of the proposed action to permit a careful assessment by commenting agencies.

(ii) The comment of EPA on water quality aspects should be requested in addition to any State or interstate certification on this aspect under Section 21(b) of the Federal Water Pollution Control Act.

(Section 8)

Agency procedures will need to take account of requirements for obtaining EPA comment under Section 309 of the Clean Air Act, as amended. Where an agency is filing an environmental statement which will be referred to EPA for comment, no change is required. In the case of proposed legislation or regulations where the matter affects the areas of EPA's jurisdiction and no environmental statement is going to be filed, such matters now must be referred to EPA for comment.

(Section 10)

Agency procedures must assure that, to the maximum extent practicable, the minimum 90 day and 30 day periods

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of public availability for draft and final environmental statements on administrative actions are observed. As noted, these periods may overlap. Agency procedures should also respond to the requirement that they "insure the fullest practicable provision of timely public information and understanding of Federal plans and programs with environmental impact in order to obtain the views of interested parties." These procedures should include, where appropriate, provision for public hearings and availability of draft environmental impact statements in advance of such hearings. Updated agency procedures must also facilitate public access to draft and final environmental statements and the comments received.

Recent lower court decisions involving the National Environmental Policy Act (e.g. EDF v. Corps of Engineers, D. Ark., LR-70-C-203, 1971; EDF v. Hardin, D., D.C., CA 2319-70, 1971) indicate courts will require an adequate compliance with Section 102(2)(C) and that this process envisions

> ...that program formulation will be directed by research results rather than that research programs will be designed to substantiate programs already decided upon... The [environmental] statement must be sufficiently detailed to allow a responsible executive to arrive at a reasonably accurate decision regarding the environmental benefits and detriments to be expected from program implementation. The statement should contain adequate discussion of alternative proposals to allow for program modification during agency review so that results to be achieved will be in accordance with national environmental goals.

Although the Supreme Court has not yet construed the Act, there is ample evidence in its treatment of Section 4(f) of the Department of Transportation Act in the Overton Park* case that it also will enforce compliance with the necessary procedural requirements.

* Citizens to Preserve Overton Park v. Volpe, 1 ELR 20110 (March 2, 1971)

We invite the earliest possible adjustment of your agency's environmental statement procedures to reflect the new requirements in the Council's guidelines and the rigor expected by Congress, the courts and the public in our implementation of the National Environmental Policy Act.

Russell E. Train
Chairman

Attachment

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Russell E. Train

Russell E. Train
Chairman

Attachment

350-A

Executive Order 11514

PROTECTION AND ENHANCEMENT OF ENVIRONMENTAL QUALITY

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SECTION 1. *Policy.* The Federal Government shall provide leadership in protecting and enhancing the quality of the Nation's environment to sustain and enrich human life. Federal agencies shall initiate measures needed to direct their policies, plans and programs so as to meet national environmental goals. The Council on Environmental Quality, through the Chairman, shall advise and assist the President in leading this national effort.

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(c) Insure that information regarding existing or potential environmental problems and control methods developed as part of research, development, demonstration, test, or evaluation activities is made available to Federal agencies, States, counties, municipalities, institutions, and other entities, as appropriate.

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(f) Proceed, in coordination with other agencies, with actions required by section 102 of the Act.

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(f) Coordinate Federal programs related to environmental quality.

(g) Advise and assist the President and the agencies in achieving international cooperation for dealing with environmental problems, under the foreign policy guidance of the Secretary of State.

(h) Issue guidelines to Federal agencies for the preparation of detailed statements on proposals for legislation and other Federal actions affecting the environment, as required by section 102(2)(C) of the Act.

(i) Issue such other instructions to agencies, and request such reports and other information from them, as may be required to carry out the Council's responsibilities under the Act.

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(k) Foster investigations, studies, surveys, research, and analyses relating to (i) ecological systems and environmental quality, (ii) the impact of new and changing technologies thereon, and (iii) means of preventing or reducing adverse effects from such technologies.

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(4) By substituting for subsection (g) of section 101 the following:

"(g) The Chairman of the Council on Environmental Quality (established by Public Law 91-190) shall assist the President in directing the affairs of the Cabinet Committee."

(5) By deleting subsection (c) of section 102.

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(8) By substituting for the term "the Committee", wherever it occurs, the following: "the Citizens' Committee".

Richard Nixon

THE WHITE HOUSE,
March 5, 1970.

[F.R. Doc. 70-2861; Filed, Mar. 5, 1970; 2:29 p.m.]

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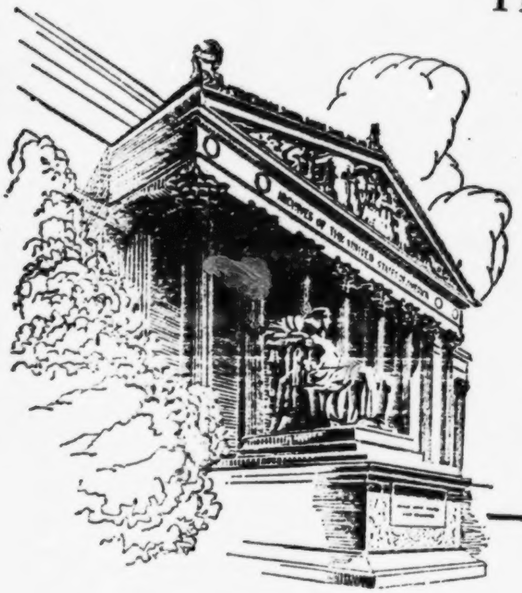
PART II

COUNCIL ON ENVIRONMENTAL QUALITY

STATEMENTS ON PROPOSED FEDERAL ACTIONS AFFECTING THE ENVIRONMENT

GUIDELINES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COUNCIL ON ENVIRONMENTAL QUALITY

STATEMENTS ON PROPOSED FEDERAL ACTIONS AFFECTING THE ENVIRONMENT

Guidelines

1. *Purpose.* This memorandum provides guidelines to Federal departments, agencies, and establishments for preparing detailed environmental statements on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment as required by section 102(2)(C) of the National Environmental Policy Act (Public Law 91-190) (hereafter "the Act"). Underlying the preparation of such environmental statements is the mandate of both the Act and Executive Order 11514 (35 F.R. 4247) of March 4, 1970, that all Federal agencies, to the fullest extent possible, direct their policies, plans and programs so as to meet national environmental goals. The objective of section 102(2)(C) of the Act and of these guidelines is to build into the agency decision making process an appropriate and careful consideration of the environmental aspects of proposed action and to assist agencies in implementing not only the letter, but the spirit, of the Act. This memorandum also provides guidance on implementation of section 309 of the Clean Air Act, as amended (42 U.S.C. 1857 et seq.).

2. *Policy.* As early as possible and in all cases prior to agency decision concerning major action or recommendation or a favorable report on legislation that significantly affects the environment, Federal agencies will, in consultation with other appropriate Federal, State, and local agencies, assess in detail the potential environmental impact in order that adverse effects are avoided, and environmental quality is restored or enhanced, to the fullest extent practicable. In particular, alternative actions that will minimize adverse impact should be explored and both the long- and short-range implications to man, his physical and social surroundings, and to nature, should be evaluated in order to avoid to the fullest extent practicable undesirable consequences for the environment.

3. *Agency and OMB procedures.* (a) Pursuant to section 2(f) of Executive Order 11514, the heads of Federal agencies have been directed to proceed with measures required by section 102(2)(C) of the Act. Consequently, each agency will establish, in consultation with the Council on Environmental Quality, not later than June 1, 1970 (and, by July 1, 1971, with respect to requirements imposed by revisions in these guidelines, which will apply to draft environmental statements circulated after June 30, 1971), its own formal procedures for (1) identifying those agency actions requiring environmental statements, the appropriate time prior to decision for the consultations required by section 102(2)(C), and the agency review process for which environmental statements are to be available, (2) obtaining information required in their preparation, (3) designating the officials who are to be responsible for the statements, (4) consulting with and taking account of the comments of appropriate Federal, State, and local agencies, including obtaining the comment of the Administrator of the Environmental Protection Agency, whether or not an environmental statement is prepared, when required under section 309 of the Clean Air Act, as amended, and section 8 of these guidelines, and (5) meeting the requirements of section 2(b) of Executive Order 11514 for providing timely public information on Federal plans and programs with environmental impact including procedures responsive to section 10 of these guidelines. These procedures should be consonant with the guidelines contained herein. Each agency should file seven (7) copies of all such procedures with the Council on Environmental Quality, which will provide advice to agencies in the preparation of their procedures and guidance on the application and interpretation of the Council's guidelines. The Environmental Protection Agency will assist in resolving any question relating to section 309 of the Clean Air Act, as amended.

(b) Each Federal agency should consult, with the assistance of the Council on Environmental Quality and the Office of Management and Budget if desired, with other appropriate Federal agencies in the development of the above procedures so as to achieve consistency in dealing with similar activities and to assure effective coordination among agencies in their review of proposed activities.

(c) State and local review of agency procedures, regulations, and policies for the administration of Federal programs of assistance to State and local governments will be conducted pursuant to procedures established by the Office of Management and Budget Circular No. A-85. For agency procedures subject to OMB Circular No. A-85 a 30-day extension in the July 1, 1971, deadline set in section 3(a) is granted.

(d) It is imperative that existing mechanisms for obtaining the views of Federal, State, and local agencies on proposed Federal actions be utilized to the extent practicable in dealing with environmental matters. The Office of Management and Budget will issue instructions, as necessary, to take full advantage of existing mechanisms (relating to procedures for handling legislation, preparation of budgetary materials, new procedures, water resource and other projects, etc.).

4. *Federal agencies included.* Section 102(2)(C) applies to all agencies of the Federal Government with respect to recommendations or favorable reports on proposals for (i) legislation and (ii) other major Federal actions significantly affecting the quality of the human environment. The phrase "to the fullest extent possible" in section 102(2)(C) is meant to make clear that each agency of the Federal Government shall comply with the requirement unless existing law applicable to the agency's operations expressly prohibits or makes compliance impossible. (Section 105 of the Act provides that "The policies and goals set forth in this Act are supplementary to those set forth in existing authorizations of Federal agencies.")

5. *Actions included.* The following criteria will be employed by agencies in deciding whether a proposed action requires the preparation of an environmental statement:

(a) "Actions" include but are not limited to:

(i) Recommendations or favorable reports relating to legislation including that for appropriations. The requirement for following the section 102(2)(C) procedure as elaborated in these guidelines applies to both (i) agency recommendations on their own proposals for legislation and (ii) agency reports on legislation initiated elsewhere. (In the latter case only the agency which has primary responsibility for the subject matter involved will prepare an environmental statement.) The Office of Management and Budget will supplement these general guidelines with specific instructions relating to the way in which the section 102(2)(C) procedure fits into its legislative clearance process;

(ii) Projects and continuing activities: directly undertaken by Federal agencies; supported in whole or in part through Federal contracts, grants, subsidies, loans, or other forms of funding assistance; involving a Federal lease, permit, license, certificate or other entitlement for use;

(iii) Policy, regulations, and procedure-making.

(b) The statutory clause "major Federal actions significantly affecting the quality of the human environment" is to be construed by agencies with a view to the overall, cumulative impact of the action proposed (and of further actions contemplated). Such actions may be localized in their impact, but if there is potential that the environment may be significantly affected, the statement is to be prepared. Proposed actions, the environmental impact of which is likely to be highly controversial, should be covered in all cases. In considering what constitutes major action significantly affecting the environment, agencies should bear in mind that the effect of many Federal decisions about a project or complex of projects can be individually limited but cumulatively considerable. This can occur when one or more agencies over a period of years puts into a project individually minor but collectively major resources, when one decision involving a limited amount of money is a precedent for action in much larger cases or represents a decision in principle about a future major course of action, or when several Government agencies individually make decisions about partial aspects of a major action. The lead agency should prepare an environmental statement if it is reasonable to anticipate a cumulatively significant impact on the environment from Federal action. "Lead agency" refers to the Federal agency which has primary authority for committing the Federal Government to a course of action with significant environmental impact. As necessary, the Council on Environmental Quality will assist in resolving questions of lead agency determination.

(c) Section 101(b) of the Act indicates the broad range of aspects of the environment to be surveyed in any assessment of significant effect. The Act also indicates that adverse significant effects include those that degrade the quality of the environment, curtail the range of beneficial uses of the environment, and serve short-term, to the disadvantage of long-term, environmental goals. Significant effects can also include actions which may have both beneficial and detrimental effects, even if, on balance, the agency believes that the effect will be beneficial. Significant adverse effects on the quality of the human environment include both those that directly affect human beings and those that indirectly affect human beings through adverse effects on the environment.

(d) Because of the Act's legislative history, environmental protective regulatory activities concurred in or taken by the Environmental Protection Agency are not deemed actions which require the preparation of environmental statements under section 102(2)(C) of the Act.

6. *Content of environmental statement.* (a) The following points are to be covered:

(i) A description of the proposed action including information and technical data adequate to permit a careful assessment of environmental impact by commenting agencies. Where relevant, maps should be provided.

(ii) The probable impact of the proposed action on the environment, including impact on ecological systems such as wildlife, fish, and marine life. Both primary and secondary significant consequences for the environment should be included in the analysis. For example, the implications, if any, of the action for population distribution or concentration should be estimated and an assessment made of the effect of any possible change in population patterns upon the resource base, including land use, water, and public services, of the area in question.

(iii) Any probable adverse environmental effects which cannot be avoided (such as water or air pollution, undesirable land use patterns, damage to life systems, urban congestion, threats to health or other consequences adverse to the environmental goals set out in section 101(b) of the Act).

(iv) Alternatives to the proposed action (section 102(2)(D) of the Act requires the responsible agency to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"). A rigorous exploration and objective evaluation of alternative actions that might avoid some or all of the adverse environmental effects is essential. Sufficient analysis of such alternatives and their costs and impact on the environment should accompany the proposed action through the agency review process in order not to foreclose prematurely options which might have less detrimental effects.

(v) The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity. This in essence requires the agency to assess the action for cumulative and long-term effects from the perspective that each generation is trustee of the environment for succeeding generations.

(vi) Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. This requires the agency to identify the extent to which the action curtails the range of beneficial uses of the environment.

(vii) Where appropriate, a discussion of problems and objections raised by other Federal, State, and local agencies and by private organizations and individuals in the review process and the disposition of the issues involved. (This section may be added at the end of the review process in the final text of the environmental statement.)

(b) With respect to water quality aspects of the proposed action which have been previously certified by the appropriate State or interstate organization as being in substantial compliance with applicable water quality standards, the comment of the Environmental Protection Agency should also be requested.

(c) Each environmental statement should be prepared in accordance with the precept in section 102(2)(A) of the Act that all agencies of the Federal Government "utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and decisionmaking which may have an impact on man's environment."

(d) Where an agency follows a practice of declining to favor an alternative until public hearings have been held on a proposed action, a draft environmental statement may be prepared and circulated indicating that two or more alternatives are under consideration.

(e) Appendix 1 prescribes the form of the summary sheet which should accompany each draft and final environmental statement.

7. Federal agencies to be consulted in connection with preparation of environmental statement. A Federal agency considering an action requiring an environmental statement, on the basis of (i) a draft environmental statement for which it takes responsibility or (ii) comparable information followed by a hearing subject to the provisions of the Administrative Procedure Act, should consult with, and obtain the comment on the environmental impact of the action of, Federal agencies with jurisdiction by law or special expertise with respect to any environmental impact involved. These Federal agencies include components of (depending on the aspect or aspects of the environment):

Advisory Council on Historic Preservation.
Department of Agriculture.
Department of Commerce.
Department of Defense.
Department of Health, Education, and Welfare.
Department of Housing and Urban Development.
Department of the Interior.
Department of State.
Department of Transportation.
Atomic Energy Commission.
Federal Power Commission.
Environmental Protection Agency.
Office of Economic Opportunity.

For actions specifically affecting the environment of their geographic jurisdictions, the following Federal and Federal-State agencies are also to be consulted:

Tennessee Valley Authority.
Appalachian Regional Commission.
National Capital Planning Commission.
Delaware River Basin Commission.
Susquehanna River Basin Commission.

Agencies seeking comment should determine which one or more of the above listed agencies are appropriate to consult on the basis of the areas of expertise identified in Appendix 2 to these guidelines. It is recommended (i) that the above listed departments and agencies establish contact points, which often are most appropriately regional offices, for providing comments on the environmental statements and (ii) that departments from which comment is solicited coordinate and consolidate the comments of their component entities. The requirement in section 102(2)(C) to obtain comment from Federal agencies having jurisdiction or special expertise is in addition to any specific statutory obligation of any Federal agency to coordinate or consult with any other Federal or State agency. Agencies seeking comment may establish time limits of not less than thirty (30) days for reply, after which it may be presumed, unless the agency consulted requests a specified extension of time, that the agency consulted has no comment to make. Agencies seeking comment should endeavor to comply with requests for extensions of time of up to fifteen (15) days.

8. *Interim EPA procedures for implementation of section 309 of the Clean Air Act, as amended.* (a) Section 309 of the Clean Air Act, as amended, provides:

> SEC. 309. (a) The Administrator shall review and comment in writing on the environmental impact of any matter relating to duties and responsibilities granted pursuant to this Act or other provisions of the authority of the Administrator, contained in any (1) legislation proposed by any Federal department or agency, (2) newly authorized Federal projects for construction and any major Federal agency action (other than a project for construction) to which section 102(2)(C) of Public Law 91-190 applies, and (3) proposed regulations published by any

department or agency of the Federal Government. Such written comment shall be made public at the conclusion of any such review.

(a) In the event the Administrator determines that any such legislation, action, or regulation is unsatisfactory from the standpoint of public health or welfare or environmental quality, he shall publish his determination and the matter shall be referred to the Council on Environmental Quality.

(b) Accordingly, wherever an agency action related to air or water quality, noise abatement and control, pesticide regulation, solid waste disposal, radiation criteria and standards, or other provisions of the authority of the Administrator if the Environmental Protection Agency is involved, including his enforcement authority, Federal agencies are required to submit for review and comment by the Administrator in writing: (i) proposals for new Federal construction projects and other major Federal agency actions to which section 102(2)(C) of the National Environmental Policy Act applies and (ii) proposed legislation and regulations, whether or not section 102(2)(C) of the National Environmental Policy Act applies. (Actions requiring review by the Administrator do not include litigation or enforcement proceedings.) The Administrator's comments shall constitute his comments for the purposes of both section 309 of the Clean Air Act and section 102(2)(C) of the National Environmental Policy Act. A period of 45 days shall be allowed for such review. The Administrator's written comment shall be furnished to the responsible Federal department or agency, to the Council on Environmental Quality and summarized in a notice published in the FEDERAL REGISTER. The public may obtain copies of such comment on request from the Environmental Protection Agency.

9. *State and local review.* Where no public hearing has been held on the proposed action at which the appropriate State and local review has been invited, and where review of the environmental impact of the proposed action by State and local agencies authorized to develop and enforce environmental standards is relevant, such State and local review shall be provided as follows:

(a) For direct Federal development projects and projects assisted under programs listed in Attachment D of the Office of Management and Budget Circular No. A-95, review of draft environmental statements by State and local governments will be through procedures set forth under Part 1 of Circular No. A-95.

(b) Where these procedures are not appropriate and where a proposed action affects matters within their jurisdiction, review of the draft environmental statement on a proposed action by State and local agencies authorized to develop and enforce environmental standards and their comments on the environmental impact of the proposed action may be obtained directly or by distributing the draft environmental statement to the appropriate State, regional and metropolitan clearinghouses unless the Governor of the State involved has designated some other point for obtaining this review.

10. *Use of statements in agency review processes; distribution to Council on Environmental Quality; availability to public.* (a) Agencies will need to identify at what stage or stages of a series of actions relating to a particular matter the environmental statement procedures of this directive will be applied. It will often be necessary to use the procedures both in the development of a national program and in the review of proposed projects within the national program. However, where a grant-in-aid program does not entail prior approval by Federal agencies of specific projects the view of Federal, State, and local agencies in the legislative process may have to suffice. The principle to be applied is to obtain views of other agencies at the earliest feasible time in the development of program and project proposals. Care should be exercised so as not to duplicate the clearance process, but when actions being considered differ significantly from those that have already been reviewed pursuant to section 102(2)(C) of the Act an environmental statement should be provided.

(b) Ten (10) copies of draft environmental statements (when prepared), ten (10) copies of all comments made thereon (to be forwarded to the Council by the entity making comment at the time comment is forwarded to the responsible agency), and ten (10) copies of the final text of environmental statements (together with all comments received thereon by the responsible agency from Federal, State, and local agencies and from private organizations and individuals) shall be supplied to the Council on Environmental Quality in the Executive Office of the President (this will serve as making environmental statements available to the President). It is important that draft environmental statements be prepared and circulated for comment and furnished to the Council early enough in the agency review process before an action is taken in order to permit meaningful consideration of the environmental issues involved. To the maximum extent practicable no administrative action (i.e., any proposed action to be taken by the agency other than agency proposals for legislation to Congress or agency reports on legislation) subject to section 102(2)(C) is to be taken sooner than ninety (90) days after a draft environmental statement has been circulated for comment, furnished to the Council and, except where advance public disclosure will result in significantly increased costs of procurement to the Government, made available to the public pursuant to these guidelines; neither should such administrative action be taken sooner than thirty (30) days after the final text of an environmental statement (together with comments) has been made available to the Council and the public. If the final text of an environmental statement is filed within ninety (90) days after a draft statement has been circulated for comment, furnished to the Council and made public pursuant to this section of these guidelines, the thirty (30) day period and ninety (90) day period may run concurrently to the extent that they overlap.

(c) With respect to recommendations or reports on proposals for legislation to which section 102(2)(C) applies, the final text of the environmental statement and comments thereon should be available to the Congress and to the public in support of the proposed legislation or report. In cases where the scheduling of congressional hearings on recommendations or reports on proposals for legislation which the Federal agency has forwarded to the Congress does not allow adequate time for the completion of a final text of an environmental statement (together with comments), a draft environmental statement may be furnished to the Congress and made available to the public pending transmittal of the comments as received and the final text.

(d) Where emergency circumstances make it necessary to take an action with significant environmental impact without observing the provisions of these guidelines concerning minimum periods for agency review and advance availability of environmental statements, the Federal agency proposing to take the action should consult with the Council on Environmental Quality about alternative arrangements. Similarly, where there are overriding considerations of expense to the Government or impaired program effectiveness, the responsible agency should consult the Council concerning appropriate modifications of the minimum periods.

(e) In accord with the policy of the National Environmental Policy Act and Executive Order 11514 agencies have a responsibility to develop procedures to insure the fullest practicable provision of timely public information and understanding of Federal plans and programs with environmental impact in order to obtain the views of interested parties. These procedures shall include, whenever appropriate, provision for public hearings, and shall provide the public with relevant information, including information on alternative courses of action. Agencies which hold hearings on proposed administrative actions or legislation should make the draft environmental statement available to the public at least fifteen (15) days prior to the time of the relevant hearings except where the agency prepares the draft statement on the basis of a hearing subject to the Administrative Procedure Act and preceded by adequate public notice and information to identify the issues and obtain the comments provided for in sections 6-9 of these guidelines.

(f) The agency which prepared the environmental statement is responsible for making the statement and the comments received available to the public pursuant to the provisions of the Freedom of Information Act (5 U.S.C., sec. 552), without regard to the exclusion of interagency memoranda when such memoranda transmit comments of Federal agencies listed in section 7 of these guidelines upon the environmental impact of proposed actions subject to section 102(2)(C).

(g) Agency procedures prepared pursuant to section 3 of these guidelines shall implement these public information requirements and shall include arrangements for availability of environmental statements and comments at the head and appropriate regional offices of the responsible agency and at appropriate State, regional, and metropolitan clearinghouses unless the Governor of the State involved designates some other point for receipt of this information.

11. *Application of section 102(2)(C) procedure to existing projects and programs.* To the maximum extent practicable the section 102(2)(C) procedure should be applied to further major Federal actions having a significant effect on the environment even though they arise from projects or programs initiated prior to enactment of the Act on January 1, 1970. Where it is not practicable to reassess the basic course of action, it is still important that further incremental major actions be shaped so as to minimize adverse environmental consequences. It is also important in further action that account be taken of environmental consequences not fully evaluated at the outset of the project or program.

12. *Supplementary guidelines, evaluation of procedures.* (a) The Council on Environmental Quality after examining environmental statements and agency procedures with respect to such statements will issue such supplements to these guidelines as are necessary.

(b) Agencies will continue to assess their experience in the implementation of the section 102(2)(C) provisions of the Act and in conforming with these guidelines and report thereon to the Council on Environmental Quality by December 1, 1971. Such reports should include an identification of the problem areas and suggestions for revision or clarification of these guidelines to achieve effective coordination of views on environmental aspects (and alternatives, where appropriate) of proposed actions without imposing unproductive administrative procedures.

RUSSELL E. TRAIN,
Chairman.

APPENDIX I

(Check one) ( ) Draft. ( ) Final Environmental Statement.

Name of Responsible Federal Agency (with name of operating division where appropriate).

1. Name of Action. (Check one) ( ) Administrative Action. ( ) Legislative Action.

2. Brief description of action indicating what States (and counties) particularly affected.

3. Summary of environmental impact and adverse environmental effects.

4. List alternatives considered.

5. a. (For draft statements) List all Federal, State, and local agencies from which comments have been requested.

b. (For final statements) List all Federal, State, and local agencies and other sources from which written comments have been received.

6. Dates draft statement and final statement made available to Council on Environmental Quality and public.

APPENDIX II—FEDERAL AGENCIES WITH JURISDICTION BY LAW OR SPECIAL EXPERTISE TO COMMENT ON VARIOUS TYPES OF ENVIRONMENTAL IMPACTS

AIR

Air Quality and Air Pollution Control

- Department of Agriculture—
  - Forest Service (effects on vegetation).
- Department of Health, Education, and Welfare (Health aspects).
- Environmental Protection Agency—
  - Air Pollution Control Office.
- Department of the Interior—
  - Bureau of Mines (fossil and gaseous fuel combustion).
  - Bureau of Sport Fisheries and Wildlife (wildlife).
- Department of Transportation—
  - Assistant Secretary for Systems Development and Technology (auto emissions).
  - Coast Guard (vessel emissions).
  - Federal Aviation Administration (aircraft emissions).

Weather Modification

- Department of Commerce—
  - National Oceanic and Atmospheric Administration.
- Department of Defense—
  - Department of the Air Force.
- Department of the Interior—
  - Bureau of Reclamation.

ENERGY

Environmental Aspects of Electric Energy Generation and Transmission

- Atomic Energy Commission (nuclear power).
- Environmental Protection Agency—
  - Water Quality Office.
  - Air Pollution Control Office.
- Department of Agriculture—
  - Rural Electrification Administration (rural areas).
- Department of Defense—
  - Army Corps of Engineers (hydro-facilities).
- Federal Power Commission (hydro-facilities and transmission lines).
- Department of Housing and Urban Development (urban areas).
- Department of the Interior—(facilities on Government lands).

Natural Gas Energy Development, Transmission and Generation

- Federal Power Commission (natural gas production, transmission and supply).
- Department of the Interior—
  - Geological Survey.
  - Bureau of Mines.

HAZARDOUS SUBSTANCES

Toxic Materials

- Department of Commerce—
  - National Oceanic and Atmospheric Administration.
- Department of Health, Education and Welfare (Health aspects).
- Environmental Protection Agency.
- Department of Agriculture—
  - Agricultural Research Service.
  - Consumer and Marketing Service.
- Department of Defense.
- Department of the Interior—
  - Bureau of Sport Fisheries and Wildlife.

Pesticides

- Department of Agriculture—
  - Agricultural Research Service (biological controls, food and fiber production).
  - Consumer and Marketing Service.
  - Forest Service.
- Department of Commerce—
  - National Marine Fisheries Service.
  - National Oceanic and Atmospheric Administration.
- Environmental Protection Agency—
  - Office of Pesticides.
- Department of the Interior—
  - Bureau of Sport Fisheries and Wildlife (effects on fish and wildlife).
  - Bureau of Land Management.
- Department of Health, Education, and Welfare (Health aspects).

Herbicides

- Department of Agriculture—
  - Agricultural Research Service.
  - Forest Service.
- Environmental Protection Agency—
  - Office of Pesticides.
- Department of Health, Education, and Welfare (Health aspects).
- Department of the Interior—
  - Bureau of Sport Fisheries and Wildlife.
  - Bureau of Land Management.
  - Bureau of Reclamation.

Transportation and Handling of Hazardous Materials

- Department of Commerce—
  - Maritime Administration.
  - National Marine Fisheries Service.
  - National Oceanic and Atmospheric Administration (impact on marine life).
- Department of Defense—
  - Armed Services Explosive Safety Board.
  - Army Corps of Engineers (navigable waterways).
- Department of Health, Education, and Welfare—
  - Office of the Surgeon General (Health aspects).
- Department of Transportation—
  - Federal Highway Administration Bureau of Motor Carrier Safety.
  - Coast Guard.
  - Federal Railroad Administration.
  - Federal Aviation Administration.
  - Assistant Secretary for Systems Development and Technology.
  - Office of Hazardous Materials.
  - Office of Pipeline Safety.
- Environmental Protection Agency (hazardous substances).
- Atomic Energy Commission (radioactive substances).

LAND USE AND MANAGEMENT

Coastal Areas: Wetlands, Estuaries, Waterfowl Refuges, and Beaches

- Department of Agriculture—
  - Forest Service.
- Department of Commerce—
  - National Marine Fisheries Service (impact on marine life).
  - National Oceanic and Atmospheric Administration (impact on marine life).
- Department of Transportation—
  - Coast Guard (bridges, navigation).
- Department of Defense—
  - Army Corps of Engineers (beaches, dredge and fill permits, Refuse Act permits).
- Department of the Interior—
  - Bureau of Sport Fisheries and Wildlife.
  - National Park Service.
  - U.S. Geological Survey (coastal geology).
  - Bureau of Outdoor Recreation (beaches).
- Department of Agriculture—
  - Soil Conservation Service (soil stability, hydrology).
- Environmental Protection Agency—
  - Water Quality Office.

Historic and Archeological Sites

- Department of the Interior—
  - National Park Service.
- Advisory Council on Historic Preservation.

- Department of Housing and Urban Development (urban areas).

Flood Plains and Watersheds

- Department of Agriculture—
  - Agricultural Stabilization and Research Service.
  - Soil Conservation Service.
  - Forest Service.
- Department of the Interior—
  - Bureau of Outdoor Recreation.
  - Bureau of Reclamation.
  - Bureau of Sport Fisheries and Wildlife.
  - Bureau of Land Measurement.
  - U.S. Geological Survey.
- Department of Housing and Urban Development (urban areas).
- Department of Defense—
  - Army Corps of Engineers.

Mineral Land Reclamation

- Appalachian Regional Commission.
- Department of Agriculture—
  - Forest Service.
- Department of the Interior—
  - Bureau of Mines.
  - Bureau of Outdoor Recreation.
  - Bureau of Sport Fisheries and Wildlife.
  - Bureau of Land Management.
  - U.S. Geological Survey.
- Tennessee Valley Authority.

Parks, Forests, and Outdoor Recreation

- Department of Agriculture—
  - Forest Service.
  - Soil Conservation Service.
- Department of the Interior—
  - Bureau of Land Management.
  - National Park Service.
  - Bureau of Outdoor Recreation.
  - Bureau of Sport Fisheries and Wildlife.
- Department of Defense—
  - Army Corps of Engineers.
- Department of Housing and Urban Development (urban areas).

Soil and Plant Life, Sedimentation, Erosion and Hydrologic Conditions

- Department of Agriculture—
  - Soil Conservation Service.
  - Agricultural Research Service.
  - Forest Service.
- Department of Defense—
  - Army Corps of Engineers (dredging, aquatic plants).
- Department of Commerce—
  - National Oceanic and Atmospheric Administration.
- Department of the Interior—
  - Bureau of Land Management.
  - Bureau of Sport Fisheries and Wildlife.
  - Geological Survey.
  - Bureau of Reclamation.

NOISE

Noise Control and Abatement

- Department of Health, Education, and Welfare (Health aspects).
- Department of Commerce—
  - National Bureau of Standards.
- Department of Transportation—
  - Assistant Secretary for Systems Development and Technology.
  - Federal Aviation Administration (Office of Noise Abatement).
- Environmental Protection Agency (Office of Noise).
- Department of Housing and Urban Development (urban land use aspects, building materials standards).

PHYSIOLOGICAL HEALTH AND HUMAN WELL BEING

Chemical Contamination of Food Products

- Department of Agriculture—
  - Consumer and Marketing Service.
- Department of Health, Education, and Welfare (Health aspects).
- Environmental Protection Agency—
  - Office of Pesticides (economic poisons).

Food Additives and Food Sanitation

- Department of Health, Education, and Welfare (Health aspects).
- Environmental Protection Agency—
  - Office of Pesticides (economic poisons, e.g., pesticide residues).
- Department of Agriculture—
  - Consumer Marketing Service (meat and poultry products).

Microbiological Contamination

- Department of Health, Education, and Welfare (Health aspects).

Radiation and Radiological Health

- Department of Commerce—
  - National Bureau of Standards.
- Atomic Energy Commission.
- Environmental Protection Agency—
  - Office of Radiation.
- Department of the Interior—
  - Bureau of Mines (uranium mines).

Sanitation and Waste Systems

- Department of Health, Education, and Welfare—(Health aspects).
- Department of Defense—
  - Army Corps of Engineers.
- Environmental Protection Agency—
  - Solid Waste Office.
  - Water Quality Office.
- Department of Transportation—
  - U.S. Coast Guard (ship sanitation).
- Department of the Interior—
  - Bureau of Mines (mineral waste and recycling, mine acid wastes, urban solid wastes).
  - Bureau of Land Management (solid wastes on public lands).
  - Office of Saline Water (demineralization of liquid wastes).

Shellfish Sanitation

- Department of Commerce—
  - National Marine Fisheries Service.
  - National Oceanic and Atmospheric Administration.
- Department of Health, Education, and Welfare (Health aspects).
- Environmental Protection Agency—
  - Office of Water Quality.

TRANSPORTATION

Air Quality

- Environmental Protection Agency—
  - Air Pollution Control Office.
- Department of Transportation—
  - Federal Aviation Administration.
- Department of the Interior—
  - Bureau of Outdoor Recreation.
  - Bureau of Sport Fisheries and Wildlife.
- Department of Commerce—
  - National Oceanic and Atmospheric Administration (meteorological conditions).

Water Quality

- Environmental Protection Agency—
  - Office of Water Quality.
- Department of the Interior—
  - Bureau of Sport Fisheries and Wildlife.
- Department of Commerce—
  - National Oceanic and Atmospheric Administration (impact on marine life and ocean monitoring).
- Department of Defense—
  - Army Corps of Engineers.
- Department of Transportation—
  - Coast Guard.

URBAN

Congestion in Urban Areas, Housing and Building Displacement

- Department of Transportation—
  - Federal Highway Administration.
    tion.
  - Federal Highway Administration.
- Office of Economic Opportunity.
- Department of Housing and Urban Development.
- Department of the Interior—
  - Bureau of Outdoor Recreation.

Environmental Effects With Special Impact in Low-Income Neighborhoods

- Department of the Interior—
  - National Park Service.
- Office of Economic Opportunity.
- Department of Housing and Urban Development (urban areas).
- Department of Commerce (economic development areas).
  - Economic Development Administration.
- Department of Transportation—
  - Urban Mass Transportation Administration.

Rodent Control

- Department of Health, Education, and Welfare (Health aspects).
- Department of Housing and Urban Development (urban areas).

Urban Planning

- Department of Transportation—
  - Federal Highway Administration.
- Department of Housing and Urban Development.
- Environmental Protection Agency.
- Department of the Interior—
  - Geological Survey.
  - Bureau of Outdoor Recreation.
- Department of Commerce—
  - Economic Development Administration.

WATER

Water Quality and Water Pollution Control

- Department of Agriculture—
  - Soil Conservation Service.
  - Forest Service.
- Department of the Interior—
  - Bureau of Reclamation.
  - Bureau of Land Management.
  - Bureau of Sports Fisheries and Wildlife.
  - Bureau of Outdoor Recreation.
  - Geological Survey.
  - Office of Saline Water.
- Environmental Protection Agency—
  - Water Quality Office.
- Department of Health, Education, and Welfare (Health aspects).
- Department of Defense—
  - Army Corps of Engineers.
  - Department of the Navy (ship pollution control).
- Department of Transportation—
  - Coast Guard (oil spills, ship sanitation).
- Department of Commerce—
  - National Oceanic and Atmospheric Administration.

Marine Pollution

- Department of Commerce—
  - National Oceanic and Atmospheric Administration.
- Department of Transportation—
  - Coast Guard.
- Department of Defense—
  - Army Corps of Engineers.
  - Office of Oceanographer of the Navy.

River and Canal Regulation and Stream Channelization

- Department of Agriculture—
  - Soil Conservation Service.
- Department of Defense—
  - Army Corps of Engineers.

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Department of the Interior—
  Bureau of Reclamation.
  Geological Survey.
  Bureau of Sport Fisheries and Wildlife.
Department of Transportation—
  Coast Guard.

WILDLIFE

Environmental Protection Agency.
Department of Agriculture—
  Forest Service.
  Soil Conservation Service
Department of the Interior—
  Bureau of Sport Fisheries and Wildlife.
  Bureau of Land Management.
  Bureau of Outdoor Recreation.

FEDERAL AGENCY OFFICES FOR RECEIVING AND COORDINATING COMMENTS UPON ENVIRONMENTAL IMPACT STATEMENTS

ADVISORY COUNCIL ON HISTORIC PRESERVATION

Robert Garvey, Executive Director, Suite 618, 801 19th Street NW., Washington, DC 20006, 343–8607.

DEPARTMENT OF AGRICULTURE

Dr. T. C. Byerly, Office of the Secretary, Washington, D.C., 20250, 388–7803.

APPALACHIAN REGIONAL COMMISSION

Orville H. Lerch, Alternate Federal Co-Chairman, 1666 Connecticut Avenue NW., Washington, DC 20235, 967–4103.

DEPARTMENT OF THE ARMY (CORPS OF ENGINEERS)

Col. J. B. Newman, Executive Director of Civil Works, Office of the Chief of Engineers, Washington, D.C. 20314, 693–7168.

ATOMIC ENERGY COMMISSION

For nonregulatory matters: Joseph J. DiNunno, Director, Office of Environmental Affairs, Washington, D.C. 20545, 973–5391.

For regulatory matters: Christopher L. Henderson, Assistant Director for Regulation, Washington, D.C. 20545, 973–7531.

DEPARTMENT OF COMMERCE

Dr. Sydney R. Galler, Deputy Assistant Secretary for Environmental Affairs, Washington, D.C. 20230, 967–4335.

DEPARTMENT OF DEFENSE

Dr. Louis M. Rousselot, Assistant Secretary for Defense (Health and Environment), Room 3E172, The Pentagon, Washington, DC 20301, 697–2111.

DELAWARE RIVER BASIN COMMISSION

W. Brinton Whitall, Secretary, Post Office Box 360, Trenton, NJ 08603, 609–883–9500.

ENVIRONMENTAL PROTECTION AGENCY

Charles Fabrikant, Director of Impact Statements Office, 1626 K Street NW., Washington, DC 20460, 632–7719.

FEDERAL POWER COMMISSION

Frederick H. Warren, Commission's Advisor on Environmental Quality, 441 G Street NW., Washington, DC 20426, 386–6084.

GENERAL SERVICES ADMINISTRATION

Rod Kreger, Deputy Administrator, General Services Administration–AD, Washington, D.C. 20405, 343–6077.

Alternate contact: Aaron Woloshin, Director, Office of Environmental Affairs, General Services Administration–ADF, 343–4161.

DEPARTMENT OF HEALTH, EDUCATION AND WELFARE

Roger O. Egeberg, Assistant Secretary for Health and Science Affairs, HEW North Building, Washington, D.C. 20202, 963–4254.

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT[1]

Charles Orlebeke, Deputy Under Secretary, 451 Seventh Street SW., Washington, DC 20410, 755–6960.

Alternate contact: George Wright, Office of the Deputy Under Secretary, 755–8192.

DEPARTMENT OF THE INTERIOR

Jack O. Horton, Deputy Assistant Secretary for Programs, Washington, D.C. 20240, 343–6181.

NATIONAL CAPITAL PLANNING COMMISSION

Charles H. Conrad, Executive Director Washington, D.C. 20576, 382–1163.

OFFICE OF ECONOMIC OPPORTUNITY

Frank Carlucci, Director, 1200 19th Street, NW., Washington, DC 20506, 254–6000.

SUSQUEHANA RIVER BASIN COMMISSION

Alan J. Summerville, Water Resources Coordinator, Department of Environmental Resources, 105 South Office Building, Harrisburg, PA. 17120, 717–787–2315.

TENNESSEE VALLEY AUTHORITY

Dr. Francis Gartrell, Director of Environmental Research and Development, 720 Edney Building, Chattanooga, TN 37401, 615–755–2002.

DEPARTMENT OF TRANSPORTATION

Herbert F. DeSimone, Assistant Secretary for Environment and Urban Systems, Washington, D.C. 20590, 426–4563.

DEPARTMENT OF TREASURY

Richard E. Slitor, Assistant Director, Office of Tax Analysis, Washington, D.C. 20220, 964–2797.

DEPARTMENT OF STATE

Christian Herter, Jr., Special Assistant to the Secretary for Environmental Affairs, Washington, D.C. 20520, 632–7964.

[FR Doc.71–5705 Filed 4–22–71;8:50 am]

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[1] Contact the Deputy Under Secretary with regard to environmental impacts of legislation, policy statements, program regulations and procedures, and precedent-making project decisions. For all other HUD consultation, contact the HUD Regional Administrator in whose jurisdiction the project lies, as follows:

James J. Barry, Regional Administrator I, Attention: Environmental Clearance Officer, Room 405, John F. Kennedy Federal Building, Boston, MA 02203, 617–223–4066.

S. William Green, Regional Administrator II, Attention: Environmental Clearance Officer, 26 Federal Plaza, New York, NY 10007, 212–264–8068.

Warren P. Phelan, Regional Administrator III, Attention: Environmental Clearance Officer, Curtis Building, Sixth and Walnut Street, Philadelphia, PA 19106, 215–597–2560.

Edward H. Baxter, Regional Administrator IV, Attention: Environmental Clearance Officer, Peachtree-Seventh Building, Atlanta, GA 30323, 404–526–5585.

George Vavoulis, Regional Administrator V, Attention: Environmental Clearance Officer, 360 North Michigan Avenue, Chicago, IL 60601, 312–353–5680.

Richard L. Morgan, Regional Administrator VI, Attention: Environmental Clearance Officer, Federal Office Building, 819 Taylor Street, Fort Worth, TX 76102, 817–334–2867.

Harry T. Morley, Jr., Regional Administrator VII, Attention: Environmental Clearance Officer, 911 Walnut Street, Kansas City, MO 64106, 816–374–2661.

Robert C. Rosenheim, Regional Administrator VIII, Attention: Environmental Clearance Officer, Samsonite Building, 1051 South Broadway, Denver, CO 80209, 303–837–4061.

Robert H. Baida, Regional Administrator IX, Attention: Environmental Clearance Officer, 450 Golden Gate Avenue, Post Office Box 36003, San Francisco, CA 94102, 415–556–4752.

Oscar P. Pederson, Regional Administrator X, Attention: Environmental Clearance Officer, Room 226, Arcade Plaza Building, Seattle, WA 98101, 206–583–5415.

APPENDIX C

PREPARATION OF ENVIRONMENTAL STATEMENTS

1. General. Preparation of environmental statements will be based on considerations discussed in the CEQ Interim Guidelines and the detailed guidance to follow. These directions are intended to assure consistency of effort in preparing statements and are not proposed to induce unthinking uniformity or limit flexibility when preparing the statements. These statements have several levels of importance with reference to the decision-making process, Corps relations with the public, and internal project planning activities. A careful, objective detailing of environmental impacts, alternatives, and implications of a proposed project should give reviewers both within and outside the Corps insight into the particular trade-offs and commitments associated with the action. The general public, environmental action groups, trade and special interest associations, governmental agencies, and Congressional Committees will all expect the statements to be a valid source of information on project effects, as well as a reflection of how the agency views environmental factors and seeks to accommodate them. Since the statements will be made available to the public and may receive broad exposure in the media, it can be assumed that they will receive careful scrutiny. Most importantly, preparation of the statements should cause systematic consideration of environmental impacts. An imaginative evaluation of alternatives and their implications should begin in the earliest stages of project formulation, with planners contemplating the criteria and range of information to be employed in preparation of final statements.

2. Working Papers. In order to assure a comprehensive treatment of environmental concerns, a check list of pertinent environmental elements should be compiled by the environmental planners. A discussion of these elements should establish their importance, placing emphasis on whether they are unique, endangered, old, popular, etc. - in essence, explore the ecological, aesthetic, cultural and other values which appear to make the elements environmentally significant. The manner in which economic considerations affect those values should also be discussed. For projects on which initial formulation has been completed, much of the information needed to characterize the elements may already be contained in existing survey documents, design memoranda and project files. Conversely, the organization of working papers at an early stage in the planning process will assist in subsequent survey studies and post-authorization design. Planners should keep abreast of current

statements may be prepared in double space format. Appendix D includes samples of format for draft and final statements.

a. Cover Sheet. This will be prepared on plain bond and will contain the following:

(1) Date.

(2) Type of statement: Draft/Final Environmental Statement.

(3) Official Project name and associated water feature and state.

(4) Preparing office.

b. Summary Sheet. This will be prepared on plain bond and will follow exactly the format prescribed by Appendix 1 of the CEQ "Guidelines." See Appendix D for samples of draft and final summary sheets. For the dates required in item 6 use the following: draft statements use date of ENGCW letter to CEQ, final statements use date of OSA letter to CEQ.

5. Content of Statement. The body of the environmental statement will contain the following eight separate sections (and attachment containing coordination letters) with the length of each being adequate to identify and develop the required information and a one page map of the proposed project. Artist's sketches and selected photos may be incorporated, if they will be particularly helpful in describing the environmental setting or environmental impacts.

a. Project description. Describe the proposal by name, specific location, purposes, authorizing document (if applicable), current status, and benefit-cost ratio. Generally delineate the project purpose and what the plan of the proposal entails. It is most important that a clear word picture be presented. If reservoir, give dimensions: surface acres of conservation pool; flood control pool; acres of total project; length; miles of shoreline, etc.; however, leaving out the technical specifications unless these are important to the understanding of just what the project is.

b. Environmental setting without the project. Describe the area, the present level of economic development, existing land and water uses, and other environmental determinants. Discuss in detail the environmental setting without focusing only on the immediate area at the risk of ignoring important regional aspects critical to the assessment of environmental impacts. Include appropriate information on topography, vegetation, animal life, historical, archeological, geological features, and social and cultural habits and customs. Discuss population trends and trends of agriculture and industry and describe (environmental element, interest group, industry, agency) of these effects and the nature and extent of the impacts on them. Discuss these effects not only with reference to the project area, but in relation to any applicable region, basin, watershed or ecosystem. In the example given, the loss of wetland might have relevance to different areas depending on the uniqueness of the filled area, the developmental plans and state of adjacent and regional wetlands, and the extent of the secondary effects of the filling (alteration of estuarine salinity wedge, sedimentation effects on adjacent shellfish, the modification of the surficial and groundwater hydrology of contiguous marsh and upland areas, etc.).

(3) Identify remedial, protective, and mitigation measures which would be taken as a part of the proposed action by the Corps or others, to eliminate, or compensate for, any detrimental aspects of the proposed action. Such measures taken for the minor or short-lived negative aspects of the project will be discussed in this section. The adverse effects which cannot be satisfactorily dealt with will be considered in greater detail along with their abatement and mitigation measures in the following section.

d. *Any adverse environmental effects which cannot be avoided should the proposal be implemented*. Discuss *only* those detrimental aspects of the proposed action which cannot be eliminated either within the framework of responsibility of those agencies or groups who identified the problem, or by alternative measures as a part of the proposed action. This discussion will identify the nature and extent of the adverse effects and the parties affected. It should include a discussion of adverse effects or objections raised by others. The loss of a given acreage of wetland by filling may be mitigated by purchase of a comparable land area, but this does not eliminate the adverse effect. Certainly the effects on the altered elements will not disappear simply because additional land is purchased. Identify the nature and extent of the principal adverse effects and the parties affected. For example, the effects of the filled wetland might include the loss of shellfish through sedimentation actions (turbidity and burial), the loss of organisms through the leaching of toxic substances from polluted marsh sediments used in the fill, the loss of a popular/valuable waterfowl census site in the estuary or the burial of ancient Indian midden sites of indeterminate archeological value. Present and comment on the objections of all concerned parties.

e. *Alternatives to the proposed action*. Describe the various alternatives considered, their general environmental impact, and the reason(s) why each was not recommended. Identify alternatives as to their beneficial and detrimental effects on the environmental elements, specifically taking into account the alternative of no action. This

APPENDIX C

PREPARATION OF ENVIRONMENTAL STATEMENTS

1. General. Preparation of environmental statements will be based on considerations discussed in the CEQ Interim Guidelines and the detailed guidance to follow. These directions are intended to assure consistency of effort in preparing statements and are not proposed to induce unthinking uniformity or limit flexibility when preparing the statements. These statements have several levels of importance with reference to the decision-making process, Corps relations with the public, and internal project planning activities. A careful, objective detailing of environmental impacts, alternatives, and implications of a proposed project should give reviewers both within and outside the Corps insight into the particular trade-offs and commitments associated with the action. The general public, environmental action groups, trade and special interest associations, governmental agencies, and Congressional Committees will all expect the statements to be a valid source of information on project effects, as well as a reflection of how the agency views environmental factors and seeks to accommodate them. Since the statements will be made available to the public and may receive broad exposure in the media, it can be assumed that they will receive careful scrutiny. Most importantly, preparation of the statements should cause systematic consideration of environmental impacts. An imaginative evaluation of alternatives and their implications should begin in the earliest stages of project formulation, with planners contemplating the criteria and range of information to be employed in preparation of final statements.

2. Working Papers. In order to assure a comprehensive treatment of environmental concerns, a check list of pertinent environmental elements should be compiled by the environmental planners. A discussion of these elements should establish their importance, placing emphasis on whether they are unique, endangered, old, popular, etc. - in essence, explore the ecological, aesthetic, cultural and other values which appear to make the elements environmentally significant. The manner in which economic considerations affect those values should also be discussed. For projects on which initial formulation has been completed, much of the information needed to characterize the elements may already be contained in existing survey documents, design memoranda and project files. Conversely, the organization of working papers at an early stage in the planning process will assist in subsequent survey studies and post-authorization design. Planners should keep abreast of current

literature and information sources to aid in compiling environmental data. Two such information sources are: "Perspectives in Environmental Planning," OCE publication, April 1970; and "Environment Reporter," BNA publication (each field office has a subscription).

3. Environmental Elements. Logical categories and sample elements for the working papers follow.

a. Geological elements: land forms (mountains, canyons), rock and mineral features, paleontologic items (fossils), structures (faults, synclines).

related: soils, erosion, strip mined areas, caves.

b. Hydrological elements: lakes, reservoirs, estuaries, rivers, subsurface water, marshes, valley storage, springs.

related: turbidity, pollutants, aquifer recharge areas, surf.

c. Botanical elements: trees, shrubs, aquatic plants, microflora.

related: seasonal colors, virgin forests.

d. Zoological elements: mammals, birds, amphibians, fish, shellfish, microfauna.

related: migration routes, breeding characteristics.

e. Archeological/historical/cultural elements: ruins, artifact sites, ghost towns, battlefields, cemeteries, festival sites, ethnic colonies.

f. Economic conditions, social relationships, human well-being.

g. Miscellaneous elements: scientific areas, National parks or forests, hunting clubs, wildlife refuges, contemporary human features (buildings, transportation systems).

It should be noted that the elements under the last three categories are relevant to the human environment and their consideration is essential to assure treatment responsive to the full concern of the NEPA.

4. Format. Environmental statements will constitute a document separate from other Corps papers and consist of the cover sheet, summary sheet, statement, and letters of coordinations. All information will be typed single spaced on one side of the page only. To facilitate review, draft

statements may be prepared in double space format. Appendix D includes samples of format for draft and final statements.

a. Cover Sheet. This will be prepared on plain bond and will contain the following:

(1) Date.

(2) Type of statement: Draft/Final Environmental Statement.

(3) Official Project name and associated water feature and state.

(4) Preparing office.

b. Summary Sheet. This will be prepared on plain bond and will follow exactly the format prescribed by Appendix I of the CEQ "Guidelines." See Appendix D for samples of draft and final summary sheets. For the dates required in item 6 use the following: draft statements use date of ENGCW letter to CEQ, final statements use date of OSA letter to CEQ.

5. Content of Statement. The body of the environmental statement will contain the following eight separate sections (and attachment containing coordination letters) with the length of each being adequate to identify and develop the required information and a one page map of the proposed project. Artist's sketches and selected photos may be incorporated, if they will be particularly helpful in describing the environmental setting or environmental impacts.

a. Project description. Describe the proposal by name, specific location, purposes, authorizing document (if applicable), current status, and benefit-cost ratio. Generally delineate the project purpose and what the plan of the proposal entails. It is most important that a clear word picture be presented. If reservoir, give dimensions: surface acres of conservation pool; flood control pool; acres of total project; length; miles of shoreline, etc.; however, leaving out the technical specifications unless these are important to the understanding of just what the project is.

b. Environmental setting without the project. Describe the area, the present level of economic development, existing land and water uses, and other environmental determinants. Discuss in detail the environmental setting without focusing only on the immediate area at the risk of ignoring important regional aspects critical to the assessment of environmental impacts. Include appropriate information on topography, vegetation, animal life, historical, archeological, geological features, and social and cultural habits and customs. Discuss population trends and trends of agriculture and industry and describe what the future environmental setting is likely to be in the absence of the proposed project. It is possible and often desirable to treat the project setting in relation to river basins, watersheds or functional ecosystems. Discuss the interrelations of projects and alternatives proposed, under construction or in operation by any agency or organization.

c. The environmental impact of the proposed action.

(1) Identify environmental impacts, viewed as changes or conversions of environmental elements which result from the direct or indirectly from; include land loss and land use changes which could be expected downstream from and adjacent to the project such as urbanization, changes in water features and characteristics, etc. Discuss impact upon the economy and social conditions and identify environmental elements which may be modified or lost. Such impacts shall be detailed in a dispassionate manner to provide a basis for a meaningful treatment of the trade-offs involved. Quantitative estimates of losses or gains (e.g. acres of marshland, number of ducks nesting or harvested) will be set forth whenever practicable. Discuss both the beneficial and detrimental impacts of the environmental changes or conversions placing some relative value on the impacts described. Discuss these effects not only with reference to the project area, but in relation to any applicable region, basin, watershed, or ecosystem. Relate the impact to the river basin or regional entity in which the action is proposed; and discuss the inter-relationship of projects and alternatives proposed, under construction, or in operation by other agencies or organizations. A thoughtful assessment of the environmental elements should aid in determining impacts. For example, the filling of a portion of the wetlands of an estuary would involve the obvious conversion of aquatic/marsh areas to terrestrial environments, the loss of wetland habitats and associated organisms, a gain in area for terrestrial organisms, a change in the nutrient regime of the runoff water entering that portion of the estuary, alteration of the hydrology of some given area, perhaps the introduction of buildings or roads, curtailment of certain commercial uses, disruption of water-based recreational pursuits, conversion of wildland aesthetics to less-pristine attributes, perhaps the removal of some portion of popular duck hunting grounds or unique bird nesting area, etc.

(2) Discuss both the beneficial and detrimental aspects of the environmental changes or conversions placing some relative value on the impacts described. A distinction should be observed here, whereby the impacts (changes) were initially detailed without making value judgements while at this point are discussed in terms of their effects (who or what is affected by the changes). Identify the recipient

(environmental element, interest group, industry, agency) of these effects and the nature and extent of the impacts on them. Discuss these effects not only with reference to the project area, but in relation to any applicable region, basin, watershed or ecosystem. In the example given, the loss of wetland might have relevance to different areas depending on the uniqueness of the filled area, the developmental plans and state of adjacent and regional wetlands, and the extent of the secondary effects of the filling (alteration of estuarine salinity wedge, sedimentation effects on adjacent shellfish, the modification of the surficial and groundwater hydrology of contiguous marsh and upland areas, etc.).

(3) Identify remedial, protective, and mitigation measures which would be taken as a part of the proposed action by the Corps or others, to eliminate, or compensate for, any detrimental aspects of the proposed action. Such measures taken for the minor or short-lived negative aspects of the project will be discussed in this section. The adverse effects which cannot be satisfactorily dealt with will be considered in greater detail along with their abatement and mitigation measures in the following section.

d. Any adverse environmental effects which cannot be avoided should the proposal be implemented. Discuss only those detrimental aspects of the proposed action which cannot be eliminated either within the framework of responsibility of those agencies or groups who identified the problem, or by alternative measures as a part of the proposed action. This discussion will identify the nature and extent of the adverse effects and the parties affected. It should include a discussion of adverse effects or objections raised by others. The loss of a given acreage of wetland by filling may be mitigated by purchase of a comparable land area, but this does not eliminate the adverse effect. Certainly the effects on the altered elements will not disappear simply because additional land is purchased. Identify the nature and extent of the principal adverse effects and the parties affected. For example, the effects of the filled wetland might include the loss of shellfish through sedimentation actions (turbidity and burial), the loss of organisms through the leaching of toxic substances from polluted marsh sediments used in the fill, the loss of a popular/valuable waterfowl census site in the estuary or the burial of ancient Indian midden sites of indeterminate archeological value. Present and comment on the objections of all concerned parties.

e. Alternatives to the proposed action. Describe the various alternatives considered, their general environmental impact, and the reason(s) why each was not recommended. Identify alternatives as to their beneficial and detrimental effects on the environmental elements, specifically taking into account the alternative of no action. This latter alternative requires a projection of the future environmental setting if the project is not accomplished (includes both natural and man-induced changes). Discuss economically justified alternatives predicated upon standard evaluation methods, but additionally, insofar as possible, identify and evaluate other ways of providing functions similar to those provided by the proposed project but which were specifically formulated with environmental quality objectives in mind. For example, the environmental trade-offs involved in filling the marsh would be different for alternatives such as: utilizing an inland site rather than filling in the marsh, hauling fill material from an upland borrow pit rather than dredging it from the estuary, or providing construction on piles or floats rather than on fill material. Discuss other possible solutions which may be outside Corps authorities.

f. The relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity. Assess the cumulative and long-term impacts of the proposed action with the view that each generation is a trustee of the environment for succeeding generations. Give special attention to considerations that would narrow the range of beneficial uses of the environment or pose long-term risks to health or safety. The propriety of any action should be weighed against the potential for damage to man's life support system - the biosphere - thereby guarding against the short-sighted foreclosure of future options or needs. It is appropriate to make such evaluations on land-use patterns and development, alterations in the organic productivity of biological communities and ecosystems and modifications in the proportions of environmental components (water, uplands, wetland, vegetation, fauna) for a region or ecosystem. For example, if a coastal marsh is extensively filled, the ability of an associated estuary to support its normal biota might be seriously impaired. Altered sediment, nutrient and biocide additions to the waters might well affect the inherent biological productivity of the estuary. In other words, if the estuary's marshes are modified enough to affect basic estuarine processes, certain of the amenities, biota, products, industry and recreation opportunities could be lost. The long-term implications of these changes are directly related to the degree that the losses are sizeable or unique.

g. Any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented. Discuss irrevocable uses of resources, changes in land use, destruction of archeological or historical sites, unalterable disruptions in the ecosystem, and other effects that would curtail the diversity and range of beneficial uses of the environment should the proposal be implemented. For example, in filling a marsh there could be a number of potential irreversible or irretrievable effects. The particular aquatic habitat filled in the marsh would be permanently lost for aquatic organisms and fill would be removed from one area and deposited in another. Include possible indirect actions - those made economically feasible, as a result of the proposed action - that would cause changes in land and water use could not be halted or reversed under free enterprise principles.

h. Coordination With Others. The coordination and public participation efforts will be summarized in this section under three subheadings: Public participation, Government agencies, and Citizen Groups.

(1) Public participation. This section will briefly summarize the public participation efforts accomplished during the conduct of the study, indicating number of public meetings, informal meetings and workshops conducted and a brief discussion of environmental issues identified, if any. For an authorized project or other administrative action discuss measures taken to involve or inform the public of the action and the environmental issues.

(2) Government agencies. Each government agency with whom coordination of the environmental statement has been accomplished will be listed. Relevant and appropriate comments will be included in the revised statements incorporating changes where necessary. Additionally, each separate view expressed concerning the environmental effects of the proposal will be summarized in a comment and appropriately discussed in a response. If an agency did not provide comments on the statement, "No comments received" will be placed under the agency name.

(3) Citizen Groups. The objective of this section is to clearly set forth the magnitude and breadth of concerns of private citizens and conservation groups regarding specific identifiable environmental impacts related to the project. The environmental issues or impacts identified by citizens and conservation groups will be incorporated in the statement where appropriate. All views expressed, concerning the environmental effects of the proposal will be set forth in a comment and appropriately discussed in a response, as are those from government agencies. To give appropriate coverage and avoid duplication of response to the same environmental concern, District Engineers may consolidate or combine the environmental issues raised into appropriate groupings. Source of the comments should be clearly identified.

(4) Copies of all correspondence from governmental agencies, citizens and conservation interests received concerning the proposal will be attached to the statement.

(5) The reporting officer will make every effort to reconcile areas of discrepancy or disagreement, where comments or reviewing agencies pose significant objection to or recommend modification of the statement. Where agreement cannot be reached within a reasonable period of time, subsequent to receipt of comments, the comments will be discussed (in (2) and (3) above) and a sub-section entitled "Unreconciled Conflicts" will be added to this section of the statement. This sub-section will contain a brief, but complete and thorough discussion of the problem (s). The discussion will be a concise and objective analysis of the environmental issues, presenting both sides of the issue.

APPENDIX D

The following are samples of the format for cover and summary sheets to be followed in preparing environmental statements. Pages D-2 and D-3 are for a draft statement, pages D-4 and D-5 are for a final statement, and pages D-6 thru D-8 show format for the section on "COORDINATION WITH OTHERS."

Samples of final environmental statements, selected to give a broad exposure to the many and varied problems and conditions, will be made available to field offices. These should be used to build a working reference in each office.

DRAFT

ENVIRONMENTAL STATEMENT

FORT MYERS BEACH CHANNEL, FLORIDA

Prepared by

U.S. ARMY ENGINEER DISTRICT, JACKSONVILLE, FLORIDA

9 April 1971

Fort Myers Beach Channel, Florida

(X) Draft ( ) Final Environmental Statement

Responsible Office: U.S. Army Engineer District, Jacksonville, Florida.

1. Name of Action: (X) Administrative ( ) Legislative

2. Description of Action: Commence construction, about 1 October 1971 of a channel extension 11 feet X 125 feet X 2,000 feet with a turning basin. Dredged material will be used as beach nourishment. Located in Lee County Florida.

3a. Environmental Impacts: Dredging of 40,000 cubic yards of material used as beach nourishment on Estero Island, increased channel and turning basin will decrease chances of vessel damage by collision or grounding.

b. Adverse Environmental Effects: Loss of 7 acres of bottom biota and temporary turbidity during construction.

4. Alternatives: "No-development."

5. Comments Requested:

Fla. Dept. of Natural Resources
Fla. Dept. of Air and Water Pollution Control
U.S. Dept. of Transportation
Fish and Wildlife Service, USDI
Fla. Dept. of Transportation
U.S. Dept. of Housing and Urban Development
Geological Survey, USDI
Environmental Protection Agency

6. Draft statement to CEQ________________.

FINAL

ENVIRONMENTAL STATEMENT

SOUTH ELLENVILLE, RONDOUT CREEK BASIN, NEW YORK

Prepared by

U.S. ARMY ENGINEER DISTRICT, NEW YORK, NEW YORK

19 April 1971

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South Ellenville, Rondout Creek Basin, New York

( ) Draft (X) Final Environmental Statement

Responsible Office: U.S. Army Engineer District, New York, N.Y.

1. Name of Action: (X) Administrative ( ) Legislative.

2. Description of Action: Initiate construction, on receipt of funds, of a flood control protection project consisting of a system of levees, concrete chute, stilling basin, debris barrier, floodwalls and transition walls, bridge replacements, and associated interior drainage facilities in Ulster County, New York.

3. a. Environmental Impacts: Provide flood proofing of unprotected flood plains; accelerate development of flood plain; loss of natural stream section and natural vegetation, and loss of recharging underground aquifers.

b. Adverse Environmental Effects: Concrete chute will replace natural stream and act as barrier to restrict circulation and may diminish water for recharging underground aquifers.

4. Alternatives: Reservoir control; stream diversion; and "no-development."

5. Comments Received:

Water Quality Office, EPA
Soil Conservation Service, USDA
N.Y. Dept. of Environmental Conservation
Village of Ellenville, N.Y.
Bureau of Water Hygiene, EPA
Bureau of Sport Fisheries and Wildlife, USDI
County of Ulster, N.Y.
Town of Wararsing, N.Y.

6. Draft statement to CEQ_______________.
Final statement to CEQ_______________.

8. COORDINATION WITH OTHERS.

a. Public Participation. Two public meetings were held on this project. The first on [illegible] September 1969 for the initiation of the study and the second on 23 February 1971 to discuss the proposed plan. The environmental aspects of the proposed plan were thoroughly discussed. News releases were issued concerning the public meetings and that the draft environmental statement had been prepared and was available from the District Engineer.

b. Government Agencies. The draft environmental statement was sent to the following governmental agencies requesting their views and comments. These comments are summarized below and copies of the replies attached to the environmental statement.

(1) [illegible]

Comment: No comments to offer in connection with the project.

(2) [illegible]

Comment: [illegible] with the project and the Environmental Statement since [illegible] are not a factor nor are there any water supply [illegible] involved with the project.

Comment: [illegible] that the phrase: "bearing little value scenically" be excluded from the Statement.

Response: The comment was considered valid and the phrase was eliminated from the present Statement.

(3) SOIL CONSERVATION SERVICE, USDA.

Comment: No comments to offer in connection with the project.

(4) U.S. FISH AND WILDLIFE SERVICE, USDI.

Comment: Project will have no adverse effects upon fish and wildlife and it offers no opportunity to benefit these resources.

Response: The comment was considered valid and incorporated into the present Statement.

Comment: The "no-development" alternative fails to deal squarely with the intent of the National Environmental Policy Act of 1969.

Response: It is believed that the method selected would best lend itself to the mountainous terrain and other topographic and geologic characteristics of the area from a design point of view and still accom-

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plish the purpose of the project with the least environmental disruption. As indicated in the Statement, the plan of improvement would provide for beautification measures to enhance the scenic attractiveness of the area and would also improve the economic conditions of landowners, both necessary to an improved environmental condition. On the other hand, a "no-development" alternative would allow periodic flooding to continue, and as previously experienced, would cause extensive damage to the surrounding lands which would adversely affect the environment, and may also result in environmental losses equivalent to about $250,000 annually during the life of the project. On this basis, it appears that project implementation of the plan selected would be a more favorable course of action than the selection of a "no-development" alternative.

(5) DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NY STATE.

Comment: The project will be a desirable addition to the area as it now exists.

Comment: Statement should make reference to construction precautions which are normally undertaken to minimize surficial disturbance and consequent erosion.

Response: The comment was considered valid and was incorporated into the present statement.

Comment: The phrase: "bearing little value scenically" is subjective.

Response: Concur in this comment, and the phrase was eliminated from the present Statement.

Comment: A section of natural stream will be destroyed; natural vegetation bordering this section will be removed; and a concrete chute will prevent infiltration in the vicinity of Route 52 bridge.

Response: The additional environmental impacts, regarding the replacement of a portion of the natural stream with a concrete chute and the removal of natural vegetation, and the effect of the proposed chute on the existing infiltration process have been incorporated into the present Statement.

Comment: Alternatives considered should be described; environmental losses due to a "no-development" alternative have not been identified; and an alternative with only environmental objectives has not been included.

Response: A more detailed explanation of the alternatives considered for the project has been included in the Statement. With regard to the comment on the environmental losses that may result from a "no-development" alternative, non-implementation of the project would allow periodic flooding to continue that could cause damages to the surrounding areas, such as loss of trees, vegetation, top soil, etc., and possible loss to human life, with a resultant unfavorable effect on the environment. The estimate of a $250,000 annual loss noted in the Statement represents the annual loss to local interests if flood control measures are not instituted and was based on the annual benefits that would accrue if the project is implemented. The estimated benefits were derived by computing the actual flood damages suffered by the area residents from the largest flood of record in conjunction with data developed from hydraulic and hydrologic studies. Actual flood damage losses were gathered from personal interviews with the local inhabitants during field investigations. An alternative with only environmental objectives in mind was incorporated into the present Statement.

Comment: There is also an irreversible commitment of about 1/2 mile of natural stream and an irretrievable commitment of the remainder of the undeveloped flood plain.

Response: The irreversible commitment attributed to the replacement of a portion of the natural stream and an irretrievable commitment of the remainder of the undeveloped flood plain are reflected in the present Statement.

Comment: The Statement does not objectively evaluate environmental impact.

Response: The present Statement has been revised to contain additional environmental impacts that would result from project implementation.

(6) COUNTY OF ULSTER, NEW YORK.

Comment: Concurred with the draft Statement and the project, and noted that implementation of the project would greatly enhance and beautify the Village of Ellenville and the Shawangunk Valley, and will help bring more sportsmen and tourists into the area.

(7) VILLAGE OF ELLENVILLE, NEW YORK.

Comment: Concurred with the draft Statement and the project.

(8) TOWN OF WAWARSING, NEW YORK.

Comment: Concurred with the draft Statement and the project.

c. Citizen Groups. There is no known environmental conflicts or issues raised by citizen or conservation groups.

(Note: This section will treat the concerns of citizen, conservation, and environmental groups in the same manner as those in the preceeding section under Government Agencies. Copies of all correspondence received will be attached to the Statement. For further guidance see Appendix C.)

SCHEDULE OF ENVIRONMENTAL STATEMENTS

Department of the Army
(Corps of Engineers)

________________Division

________________Date

A	B	C	D	E	F	G
Project, Action or Activity	Estm Fed Cost (000)	Initiate Preparation	Draft for Comments	Fwd Final Stm.	Final Stm. to CEQ	Earliest Action

[illegible] Form 4351-R (07)
[illegible] 71

INSTRUCTIONS

Col. A - List the project alphabetically by State broken down Categories a. through d. (paragraph 3.b.(2)).

Note: A project which has received a construction or land acquisition appropriation, or is included in the President's Budget for FY 1972 for construction or land acquisition, will be classified as "Continuing Construction."

Col. B - Furnish the total estimated Federal cost (FY 1972 Budget). For O&M projects leave this column blank.

Col. C - List date the District began preparation of statement, or scheduled date.

Col. D - List date the District sent draft statement to other agencies and higher authority for comments or scheduled date.

Col. E - List date that final coordinated statement was forwarded by Division to OCE, or scheduled date.

Col. F - If final coordinated statement has been placed on file with CEQ, then list date of Office, Secretary Army's transmittal letter and leave Columns C through E blank. Or for scheduling purposes allow six weeks from date in Column E.

Col. G - List the later date of the following:

1. Column D plus 90 days.
2. Column F plus 30 days.

The
Army
Corps of
Engineers
and
Environmental
Conservation

9 Questions

Department of the Army
Office of the Chief of Engineers
Civil Works Directorate
Washington, D.C. 20314

February 1971

In 1775 the Corps of Engineers was formed as a part of the Continental Army. Congress assigned the Corps its first civil function in 1824, with authorization to remove sandbars and snags from major navigable rivers. In 1936 nationwide Federal responsibility for flood control was given to the Corps. The Army Engineers have continued their military mission, with defense functions that range from building ballistic missile sites to handling Army real estate. In addition, the Corps continues to carry its civil works responsibilities, but for these functions the Chief of Engineers answers directly to the Secretary of the Army and to Congress, and not to the Department of Defense. Today the Corps has more than 4,000 civil works projects either completed or under construction. They include multipurpose dams, navigation projects, structures for shore erosion control, and local flood control projects. The Corps also has permit powers regulating construction and discharge in practically all of the nation's rivers and harbors. In 1970 the civil works appropriation for the Corps was over 1.1 billion dollars. There are 29,000 civilian employees and 280 military officers now in the water resources program. The construction work itself is carried out under competitive contracts with private builders.

The Congress, the Corps, and the public generally have recognized that the United States is facing serious dangers to the quality of its physical environment. Population growth, industrial expansion, urban sprawl, pollution, and resource exploitation are not only upsetting aesthetic qualities of the landscape, but may be endangering the biosphere itself. The country has been committed to economic expansion, including the construction of dams and canals, and the Corps has been a part of this developmental process, answering the requests of the people for protection against floods, water for drinking and for sanitation, recreation areas, hydroelectric power, and waterways for commerce and pleasure craft. But too often people have acted as though there would be an endless supply of the nation's land and water resources. The country is now facing the necessity of insuring environmental quality, including the need to strike a balance between economic development and the preservation of natural beauty and decent surroundings.

Planning is necessary to preserve areas of natural beauty, to design developments in harmony with nature, and to conserve and protect the nation's natural resources. Regulation is necessary to avoid the abuses caused by pollution and ill-considered construction. Citizens must be aware of the dangers to the environment, and should also know the role of the Corps of Engineers an agency with extensive impact on the use, development, and conservation of the nation's water resources.

1. How does the National Environmental Policy Act of 1969 affect Corps consideration of its projects?

This law outlines requirements for systematic consideration of environmental values for any project being planned. The Act requires that project proposals include a detailed statement which covers the following points: (1) the environmental impact of the proposed action; (2) the adverse environmental effects which cannot be avoided if the project is carried out; (3) alternatives to the proposed action; (4) the relationship between the short-term uses of the environment and the maintenance of long-term productivity; and (5) the irreversible and irretrievable commitments of resources which would be involved if the proposed project is adopted. A statement is to be forwarded to the President's Council on Environmental Quality

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before each proposed project is implemented. Those projects which are now in progress, but still include unresolved environmental conflicts, must also have statements prepared. The environmental statements are a matter of public record. The Corps is integrating the provisions of this Act into its planning procedures. It should be noted that the Environmental Policy Act is the first Congressional authority which allows the Corps to consider the environment for its own sake in water resource development.

2. How will Corps planning affect future environmental quality?

The ugliness of urban and industrial sprawl provides a lesson in what piecemeal and unplanned development can do to the environment. Anyone with an environmental perspective must realize that only through planning, careful, long-range, scientific planning can man design with nature. Like it or not, the population is increasing and increased demands are going to be made on our land and water resources. With comprehensive, long-range planning, water needs can be foreseen, pollution averted, wildlife can be protected and places of beauty can be preserved or enhanced. The Corps of Engineers is one of several agencies involved in coordinating water resource use and participates in the comprehensive river basin study program under the auspices of the Water Resources Council. This approach to planning differs from the more traditional concept in many important ways. The goals of comprehensive planning include the need for environmental quality and the general well-being of the population as well as economic criteria for the local area and the nation. Ideally, these goals will have equal status in the planning system. Careful consideration of widely different alternatives is one of the primary advantages of the comprehensive planning concept. The Corps has established the Institute for Water Resources specifically for the purpose of developing long-range planning methods, and for drafting policy for evaluating project alternatives with criteria other than economic efficiency alone. In April 1970, the Chief of Engineers appointed a ten-member Environmental Advisory Board made up of nationally known conservationists and environmental consultants to help the Corps take into account environmental considerations in all of its activities.

3. Does Corps research include consideration of ecology?

The Corps is presently conducting several studies bearing on ecological considerations. Some of them directly concern immediate engineering problems; others clarify the Corps' course in the future and point out the ecological problems caused by activities in the past. For example, the Corps is responsible for keeping waterways clear of aquatic weeds, a job which has often involved the use of chemical herbicides. Studies with biologic controls and the use of laser beams are offering alternatives to the continued use of chemicals. In conjunction with Harvard University, studies have been undertaken to plan landscaping and design for construction projects. The goal is to find the least disruptive design ecologically as well as aesthetically. A significant study on the effects of engineering on coastal ecology is being sponsored by the Corps in conjunction with university consultants. Their recommendations may affect construction and maintenance of many future shore projects. The Institute for Water Resources is developing a system for assessing environmental values to aid planners in protecting areas that are especially significant as wilderness and wildlife areas and places of natural beauty or cultural importance.

4. Do local people participate in water resources planning?

The cooperation of the local community, including both support and criticism, is necessary in order for the Corps to realize the actual public needs of the project area. An initial meeting is held early in the course of each study to explain the nature and scope of the study and open lines of communication. Some of the most effective local participation occurs during meetings when the study is in the formulation stage, when alternative solutions are reasonably known but before a plan has been tentatively selected. In most cases, a third meeting is held once a solution has been tentatively selected, but before completion of the report. An example of effective public participation occurred with the Morrison Creek flood protection project near Sacramento, California. The plan originally proposed by the Corps was opposed by several conservation interests. Criticism was based on the fact that the project would open several thousand acres of rural land to urban development, altering a wildlife habitat and a "greenbelt" area. Because of opposition brought forth at the public hearing, the Corps arranged meetings with local interests to study further alternatives. Corps recommendations for the project have since incorporated the needs for flood control in the urban areas with recreation and ecological requirements for the undeveloped flood plain. In the case of Morrison Creek, there were local people concerned enough to speak up and present the Corps with their viewpoint.

The Corps does realize, however, that in many project areas, people become interested in proposed projects only after plans are authorized and ground is broken. When interest is awakened late in the development of a project, conservationists have sometimes felt at a disadvantage when presenting their views in the face of carefully compiled Corps data and blueprints. In order to bring in the value judgments necessary for true environmental design, a new approach is being tried in the Omaha District. The Corps of Engineers Colorado Citizens Coordinating Committee on Environmental Planning has been formed for the planning of Chatfield Dam and Reservoir near Denver, Colorado. The recommendations of this group have gone into the design for aesthetics, water quality, wildlife, and other environmental aspects. Hopefully, the lessons learned at Chatfield can be applied to other Corps projects throughout the country.

5. What positive effects on the environment does a dam and reservoir project have?

A dam built for flood control will exert a strong positive effect on the environment through its basic function of preventing the devastation of flooding downstream. Many Corps dams also generate hydroelectric power, which is still the most environmentally "clean" form of electricity. With hydropower there is no air and water pollution as there is with the burning of fossil fuels, and no thermal pollution as with contemporary nuclear plants.

Through flow augmentation, dams also can contribute to water pollution abatement. Water is released from storage reservoirs when the pollution load downstream is too large for a river to handle. With the additional streamflow, the river continues to oxygenate and decompose the wastes just as rivers have always cleaned themselves of natural wastes. But rivers cannot be expected to take care of the excesses of cities and industries, even with flow augmentation. Pollution must be controlled at its source. When dealing with wastes which are practically impossible to stop, such as agricultural run-off and natural drainage, however, flow regulation is a useful tool to supplement other pollution controls.

The man-made lake behind a dam can often be an environmental enhancement. A lake not only offers an interesting change in scenery, but provides for recreation such as boating, swimming and water-skiing not found in many free-flowing rivers. In number of visits, the Corps operates the largest recreation program in the Federal Government, with more than 350 Corps-built lakes. The shorelines of all Corps lakes are open to the public. In many areas of the country, lakes enhance sport fishing. For instance, in many Corps multiple-purpose projects, the lake supports warm water fishing, while the cold powerhouse discharge provides a trout fishing habitat downstream.

6. What does the Corps do about the negative effects of its projects?

A construction project such as a dam will have some detrimental effects on the environment. A dam will change a part of the river from a free-flowing stream to a slack-water reservoir. Such a change can have positive aesthetic and recreational values. But there are cases where the white water of a wild river must be valued as a retreat from motorboats and other forms of "noisy" recreation. The problem is one of choice, and one of advanced planning so that the especially valuable wild rivers can be protected.

Building a reservoir will also restructure the immediate ecosystem. The condition of the fish and wildlife has long been a consideration of the Corps, especially in the realm of sport fishery. Fish ladders and hatcheries have often been a part of projects. The largest sport fish hatchery in the world is at Dworshak Dam in Idaho. The hatchery will help sustain the migratory fishery of the basin, which could otherwise be seriously curtailed by the system of dams on the Snake and

Clearwater Rivers. Also as a part of the Dworshak project, some 40,000 acres of surrounding land is being managed for the protection of deer and elk.

Water impoundment behind a dam causes a stratification of water temperature, the water warming at the surface, and staying cold at the deeper levels. Multi-level withdrawals from the reservoir will allow whatever downstream temperatures are found to be necessary. This approach will also help maintain correct standards of dissolved oxygen and nutrients. Construction itself can cause aesthetic scars on the landscape. Corps specifications require the contractors to minimize aesthetic and environmental damage during construction and to restore the disturbed areas upon project completion.

7. Does the Corps have authority to control water pollution?

Water pollution control is chiefly the responsibility of the Water Quality Office (WQO) in the Environmental Protection Agency (EPA), and of state pollution control administrators. However, it is illegal for anyone to release wastes into navigable waters without a permit from the Corps of Engineers. All permit applications of this nature are reviewed by EPA in conjunction with the State pollution control agencies. Applications which cannot meet the standards for pollution control are rejected by the Corps. The Refuse Act of 1899 states that no wastes, other than municipal sewage, may be dumped into navigable waters or their tributaries from ships or shore. Industries are being advised that they must have a permit for discharge or deposit in navigable waters or their tributaries. Prosecution will follow in those cases where discharges continue in violation of State and EPA standards.

8. What other regulatory responsibilities does the Corps have?

The Corps has regulatory powers in all of the country's navigable waterways. No dredging, filling, or erecting of structures should take place in these waters without Corps approval. In accordance with the original purposes of the laws, this permit power was once exercised with a view for navigational effects only. More recently, since the Fish and Wildlife Coordination Act, the Water Quality Act, and the Environmental Policy Act, environmental quality has increasingly entered into the criteria for issuing permits. Regulations now include requirements for evaluating the impact on fish and wildlife, water quality, conservation, pollution, aesthetics, ecology, and other factors, as well as on navigation. Permit applications are reviewed by all of the appropriate State and Federal agencies for environmental impact. The Corps will issue a permit only after full coordination with these agencies when environmental considerations are involved.

9. How can individual citizens become involved in the decision-making process for the Corps projects or permit applications?

There are many levels at which the public can be effective in issues of Corps policy and decision. Some of these approaches are described in Question 4 above. Corps administration is highly de-centralized, and the local District Engineer's office is a good place for any interested citizen to begin. The thirty-seven districts are administered by ten Division Offices, organized in accordance with major drainage basins. The divisions report to the Office of the Chief of Engineers in Washington, D.C. The following guidelines might be useful to anyone interested in Corps activities.

Get the facts.

- To be most effective, an opinion must be based on fact, and should not reflect misinformation or lack of information. Be aware of Corps planning and study activities. These are the seeds of future projects. The District office can inform you of the planning activities in that area.
- Background information on projects or other activities in your local area can be obtained from the District Engineer's office.
- The Public Affairs Office of the Chief of Engineers can be contacted for information on projects outside your area. Write: ENGPA, Office of the Chief of Engineers, Department of the Army, Washington, D.C. 20314.

- Environmental impact statements are being prepared for all new project proposals and some on-going projects, in accordance with the National Environmental Policy Act of 1969. Once these statements have been referred to the Council on Environmental Quality, they are available for reference in the District office responsible for the project, as well as in the Public Affairs Office, Office of the Chief of Engineers.

- Find out the stage of planning and construction the project is in. Interest expressed early in the planning is most effective, your alternative suggestions are most useful at that time.

- On request, the District Engineer's office will put your name or the name of your organization on the Corps' mailing list.

Attend local Corps hearings and public meetings.

- Hearings on projects and permit applications are open to the public. The times and places are advertised in the local newspapers, or can be obtained from the District office.

- All interested citizens are welcome to testify at the hearings, and all testimony becomes a permanent part of the official project record. Written testimony can also be submitted for inclusion in the record.

Know the decision-making process.

- Nearly all Corps projects must be approved by Congress; for authorization and for funding. A project's funding is considered every year.

- The House and Senate Committees on Public Works must review authorization for proposed Corps studies or projects.

- Projects must be reviewed for funding by the Appropriations Committees of both houses.

- Interested citizens are welcome to attend the open committee hearings. People wishing to testify should contact the committee staff in advance.

- A Corps project is also dependent on the support of the Governor of the State in which it is to be built.

Build local support; be aware of organizational help.

- Whether you are for the proposed project or for another alternative, try your ideas out on others; obtain information, ideas, and support from other interested parties.

- Nationally based organizations need the support of wide membership, and can supply information and help for making their members' interests known.

- No Corps action is taken without local support. Organize in your local area.

Be aware of the facts; be interested enough to express your opinion.

Public Law 91-190
91st Congress, S. 1075
January 1, 1970

An Act

83 STAT. 852

To establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Environmental Policy Act of 1969".

National Environmental Policy Act of 1969.

PURPOSE

SEC. 2. The purposes of this Act are: To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

TITLE I

DECLARATION OF NATIONAL ENVIRONMENTAL POLICY

SEC. 101. (a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

Policies and goals.

(b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may—

(1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;

(2) assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;

(3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;

(4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;

(5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

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(6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

(c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

Administration. Sec. 102. The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, and (2) all agencies of the Federal Government shall—

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of title 5, United States Code, and shall accompany the proposal through the existing agency review processes;

Copies of statements, etc.; availability.

81 Stat. 54.

(D) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(E) recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(F) make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(G) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(H) assist the Council on Environmental Quality established by title II of this Act.

Sec. 103. All agencies of the Federal Government shall review their present statutory authority, administrative regulations, and current policies and procedures for the purpose of determining whether there are any deficiencies or inconsistencies therein which prohibit full compliance with the purposes and provisions of this Act and shall propose to the President not later than July 1, 1971, such measures as may be necessary to bring their authority and policies into conformity with the intent, purposes, and procedures set forth in this Act.

view.

Sec. 104. Nothing in Section 102 or 103 shall in any way affect the specific statutory obligations of any Federal agency (1) to comply with criteria or standards of environmental quality, (2) to coordinate or consult with any other Federal or State agency, or (3) to act, or refrain from acting contingent upon the recommendations or certification of any other Federal or State agency.

Sec. 105. The policies and goals set forth in this Act are supplementary to those set forth in existing authorizations of Federal agencies.

TITLE II

COUNCIL ON ENVIRONMENTAL QUALITY

Report to Congress.

Sec. 201. The President shall transmit to the Congress annually beginning July 1, 1970, an Environmental Quality Report (hereinafter referred to as the "report") which shall set forth (1) the status and condition of the major natural, manmade, or altered environmental classes of the Nation, including, but not limited to, the air, the aquatic, including marine, estuarine, and fresh water, and the terrestrial environment, including, but not limited to, the forest, dryland, wetland, range, urban, suburban, and rural environment; (2) current and foreseeable trends in the quality, management and utilization of such environments and the effects of those trends on the social, economic, and other requirements of the Nation; (3) the adequacy of available natural resources for fulfilling human and economic requirements of the Nation in the light of expected population pressures; (4) a review of the programs and activities (including regulatory activities) of the Federal Government, the State and local governments, and nongovernmental entities or individuals, with particular reference to their effect on the environment and on the conservation, development and utilization of natural resources; and (5) a program for remedying the deficiencies of existing programs and activities, together with recommendations for legislation.

Council on Environmental Quality.

Sec. 202. There is created in the Executive Office of the President a Council on Environmental Quality (hereinafter referred to as the "Council"). The Council shall be composed of three members who shall be appointed by the President to serve at his pleasure, by and with the advice and consent of the Senate. The President shall designate one of the members of the Council to serve as Chairman. Each member shall be a person who, as a result of his training, experience, and attainments, is exceptionally well qualified to analyze and interpret environmental trends and information of all kinds; to appraise programs and activities of the Federal Government in the light of the policy set forth in title I of this Act; to be conscious of and responsive to the scientific, economic, social, esthetic, and cultural needs and interests of the Nation; and to formulate and recommend national policies to promote the improvement of the quality of the environment.

SEC. 203. The Council may employ such officers and employees as may be necessary to carry out its functions under this Act. In addition, the Council may employ and fix the compensation of such experts and consultants as may be necessary for the carrying out of its functions under this Act, in accordance with section 3109 of title 5, United States Code (but without regard to the last sentence thereof).

80 Stat. 416.

Duties and functions.

SEC. 204. It shall be the duty and function of the Council—

(1) to assist and advise the President in the preparation of the Environmental Quality Report required by section 201;

(2) to gather timely and authoritative information concerning the conditions and trends in the quality of the environment both current and prospective, to analyze and interpret such information for the purpose of determining whether such conditions and trends are interfering, or are likely to interfere, with the achievement of the policy set forth in title I of this Act, and to compile and submit to the President studies relating to such conditions and trends;

(3) to review and appraise the various programs and activities of the Federal Government in the light of the policy set forth in title I of this Act for the purpose of determining the extent to which such programs and activities are contributing to the achievement of such policy, and to make recommendations to the President with respect thereto;

(4) to develop and recommend to the President national policies to foster and promote the improvement of environmental quality to meet the conservation, social, economic, health, and other requirements and goals of the Nation;

(5) to conduct investigations, studies, surveys, research, and analyses relating to ecological systems and environmental quality;

(6) to document and define changes in the natural environment, including the plant and animal systems, and to accumulate necessary data and other information for a continuing analysis of these changes or trends and an interpretation of their underlying causes;

(7) to report at least once each year to the President on the state and condition of the environment; and

(8) to make and furnish such studies, reports thereon, and recommendations with respect to matters of policy and legislation as the President may request.

SEC. 205. In exercising its powers, functions, and duties under this Act, the Council shall—

34 F. R. 8693.

(1) consult with the Citizens' Advisory Committee on Environmental Quality established by Executive Order numbered 11472, dated May 29, 1969, and with such representatives of science, industry, agriculture, labor, conservation organizations, State and local governments and other groups, as it deems advisable; and

(2) utilize, to the fullest extent possible, the services, facilities, and information (including statistical information) of public and private agencies and organizations, and individuals, in order that duplication of effort and expense may be avoided, thus assuring that the Council's activities will not unnecessarily overlap or conflict with similar activities authorized by law and performed by established agencies.

SEC. 206. Members of the Council shall serve full time and the Chairman of the Council shall be compensated at the rate provided for Level II of the Executive Schedule Pay Rates (5 U.S.C. 5313). The other members of the Council shall be compensated at the rate provided for Level IV or the Executive Schedule Pay Rates (5 U.S.C. 5315).

Tenure and compensation.
80 Stat. 460, 461.
81 Stat. 638.

SEC. 207. There are authorized to be appropriated to carry out the provisions of this Act not to exceed $300,000 for fiscal year 1970, $700,000 for fiscal year 1971, and $1,000,000 for each fiscal year thereafter.

Appropriations.

Approved January 1, 1970.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 91-378, 91-378, pt. 2, accompanying H. R. 12549 (Comm. on Merchant Marine & Fisheries) and 91-765 (Comm. of Conference).
SENATE REPORT No. 91-296 (Comm. on Interior & Insular Affairs).
CONGRESSIONAL RECORD, Vol. 115 (1969):
July 10: Considered and passed Senate.
Sept. 23: Considered and passed House, amended, in lieu of H. R. 12549.
Oct. 8: Senate disagreed to House amendments; agreed to conference.
Dec. 20: Senate agreed to conference report.
Dec. 22: House agreed to conference report.

GPO 37-139

CORPS OF ENGINEERS DIVISION AND DISTRICT OFFICERS

DIVISION (MAIL ADDRESS)	DISTRICT (MAIL ADDRESS)	LOCATION & TELEPHONE	OFFICER IN CHARGE
Huntsville, Alabama P.O. Box 1600 West Station 35807		106 Wynn Drive Huntsville, Alabama 205-895-5160	MG Robert P. Young
Lower Mississippi Valley P.O. Box 80 Vicksburg, Miss. 39180		Corner Crawford & Walnut Vicksburg, Miss. 601-636-1311; ext. 201	MG A.P. Rollins, Jr.
	Memphis 668 Federal Office Building Memphis, Tenn. 38103	901-534-3221	COL. John V. Parrish
	New Orleans P.O. Box 60267 New Orleans, La. 70160	Foot of Pyrtania St. New Orleans, La. 504-865-1121; ext. 200	COL. Herbert R. Haar,
	St. Louis 906 Olive St. St. Louis, Mo. 63101	314-268-2821	COL. Carroll LeTellier
	Vicksburg P.O. Box 60 Vicksburg, Miss. 39180	601-636-1311	COL. John W. Brennan
Missouri River P.O. Box 103 Downtown Station Omaha, Nebraska 68101		USPO & Courthouse 215 North 17th St. Omaha, Nebraska 402-221-1221	BG J.W. Morris
	Kansas City 700 Federal Office Bldg. 601 E. 12th Kansas City, Mo. 64106	816-374-3201	COL. Reuben Anderson

CORPS OF ENGINEERS DIVI ON AND DISTRICT OFFICERS

DIVISION (MAIL ADDRESS)	DISTRICT (MAIL ADDRESS)	LOCATION & TELEPHONE	OFFICER IN CHARGE
Missouri River (CONT.)	Omaha 7410 USPO & Courthouse 215 North 17th St. Omaha, Nebraska 68102	402-221-3900	COL. Billy Pendergras
New England 424 Trapelo Road Waltham, Mass. 02154		617-894-2400; ext. 220	COL. Frank P. Bane
North Atlantic 90 Church St. New York, N.Y. 10007		212-264-7101	MG Charles M. Duke
	Baltimore P.O. Box 1715 Baltimore, Md. 21203	31 Hopkins Plaza Baltimore, Md. 301-962-4545	COL. W.J. Love
	New York 26 Federal Plaza New York, New York	212-264-0100	COL. James Barnett
	Norfolk Ft. Norfolk 803 Front St. Norfolk, Va. 23510	703-625-8201	COL James H. Tormey
	Philadelphia U.S. Custom House 2nd & Chestnut St. Philadelphia, Pa. 19106	215-597-4848	COL. James A. Johnson
North Central 536 S. Clark St. Chicago, Ill. 60605		312-353-6310	BG William W. Watkin,J
	Buffalo 1776 Niagara St. Buffalo, N.Y. 14207	716-876-5454; ext. 12	COL. Ray S. Hansen

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	Detroit P.O. Box 1027 Detroit, Michigan 48231	150 Michigan Avenue Detroit, Michigan 313-962-1261; ext. 412	COL. Myron D. Snoke
	Rock Island Clock Tower Building Rock Island, Illinois 61201	309-788-6361; ext. 224	COL. James E. Bunch
	St. Paul 1210 U.S. PO & Customhouse St. Paul, Minnesota 55101	612-725-7501	COL. Charles McGinnis
	Lake Survey 630 Federal Bldg. & U.S. Courthouse Detroit, Michigan 48226	313-226-6161	LTC James M. Miller
North Pacific 210 Custom House Portland, Oregon 97209		220 S.W. 8th St. Portland, Oregon 503-226-3361; ext. 2500	BG Roy S. Kelley
	Alaska P.O. Box 7002 Anchorage, Alaska 99501	907-752-9114	COL A.C. Mathews
	Portland P.O. Box 2946 Portland, Oregon 97208	2850 S.E. 82nd Ave. Portland, Oregon 503-777-4441; ext. 200	COL. Paul D. Triem
	Seattle 1519 Alaskan Way, South Seattle, Washington 98134	206-682-2700; ext. 300	COL. Howard Sargeant

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Ohio River P.O. Box 1159 Cincinnati, Ohio 45201		550 Main St. Cincinnati, Ohio 513-684-3002	MG W.L. Starnes
	Huntington P.O. Box 2127 Huntington, W. Va. 25721	502 8th St. Huntington, W. Va. 304-529-2318; ext. 253	COL. Maurice Roush
	Louisville P.O. Box 59 Louisville, Ky. 40201	600 Federal Place Louisville, Ky. 502-582-5601	COL. John T. Rhett
	Nashville P.O. Box 1070 Nashville, Tenn. 37202	306 Federal Office Bldg. Nashville, Tenn. 615-242-8321; ext.5626	COL. John C. Bell
	Pittsburgh 1828 Federal Bldg. 1000 Liberty Ave. Pittsburgh, Pa. 15222	Federal Bldg. 1000 Liberty Ave. Pittsburgh, Pa. 412-644-6800	COL. E.C. West
South Atlantic 510 Title Bldg. 30 Pryor St., S.W. Atlanta, Ga. 30303		404-526-6711	MG Richard H. Free
	Canaveral P.O. Box 21065 Kennedy Space Center, Fla. 32815	Bldg. K6-1146 Kennedy Space Center, Fla. 305-867-2003	COL. Gilbert Newman

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CORPS OF ENGINEERS DIVISION AND DISTRICT OFFICERS

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	Charleston P.O. Box 919 Charleston, S.C. 29402	Federal Bldg. 334 Meeting St. Charleston, S.C. 803-577-4171; ext. 229	COL. Burke W. Lee
	Jacksonville P.O. Box 4970 Jacksonville, Fla. 32201	Federal Bldg. 400 West Bay St. Jacksonville, Fla. 904-791-2241	COL. Avery Fullerton
	Mobile P.O. Box 2288 Mobile, Alabama 36601	2301 Airport Blvd. Mobile, Ala. 205-473-0311; ext. 411	COL. Harry A. Griffith
	Savannah P.O. Box 883 Savannah, Ga. 31402	200 E. Saint Julian St. Savannah, Ga. 912-233-8822; ext. 226	COL. John S. Egbert
	Wilmington P.O. Box 1890 Wilmington, N.C. 28401	308 Federal Bldg. U.S. Courthouse Wilmington, N.C. 919-763-9971; ext. 466	COL. Paul S. Denison
South Pacific 630 Sansome St.,Rm.1216 San Francisco, Ca. 94111		415-449-2232	COL. James Donovan
	Los Angeles P.O. Box 2711 Los Angeles, Ca. 90053	300 North Los Angeles St Los Angeles, Ca. 213-688-5300	COL. Robt. J. Malley
	Sacramento 650 Capitol Mall Sacramento, Ca. 95314	916-449-2232	COL. James Donovan

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Southwestern 1114 Commerce St. Dallas, Texas 75202		214-749-3336	BG Harold R. Parfitt
	Albuquerque P.O. Box 1580 Albuquerque, N.M. 87103	517 Gold Ave., S.W. Albuquerque, N.M. 505-843-2732	COL. Richard West
	Fort Worth P.O. Box 17300 Ft. Worth, Texas 76102	819 Taylor St. Ft. Worth, Texas 817-334-2300	COL. R.S. Kristoferso
	Galveston P.O. Box 1229 Galveston, Texas 77550	Santa Fe. Bldg. Galveston, Texas 713-763-1211; ext. 1301	LTC Nolan Rhodes
	Little Rock P.O. Box 867 Little Rock, Ark. 72203	700 W. Capitol Little Rock, Ark. 501-372-4361; ext. 5530	COL. William C. Burns
	Tulsa P.O. Box 61 Tulsa, Okla. 74102	224 South Boulder Tulsa, Oklahoma 918-584-7151; ext. 7311	COL. Vernon W. Pinkey

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ENVIRONMENTAL IMPACT STATEMENTS RECEIVED BY THE COUNCIL ON ENVIRONMENTAL QUALITY FROM FEB. 1 TO FEB. 28, 1971

To obtain a copy of a statement, contact the person whose name is listed directly below the title of the particular agency involved. Telephone numbers refer to Washington, D.C., area code 202, unless otherwise indicated. Draft statements are not listed after final statements have been received on a proposed action previously covered in a draft statement. When a final statement has not been preceded by a draft, that fact is noted.

House Public Works Committee
Majority: John A. Blatnik, Ch.
Minority: Hon. William Harsha
2165 Rayburn Building
Washington, D. C. 20515

Senate Public Works Committee
Majority: Van Vladricken
Minority: Bailey Guard
Room 4202
New Senate Office Building
Washington, D. C. 20510

House Committee on Appropriations
Attention: Public Works Subcommittee
Room H 218, Capital Building
Washington, D. C. 20515

Senate Committee on Appropriations
Attention: Public Works Subcommittee
Room 1110, New Senate Office
Washington, D. C. 20510

Donald Craybill, Director
Natural Resources Programs Division, OMB
New Executive Office Building
Room 8202
Washington, D. C. 20503

William White, Chief of River Basin Studies
Bureau of Sport Fisheries & Wildlife *
Room 3240
Washington, D. C. 20240

Dir. George B. Hartzpg, Jr
or
Raymond Freeman, Deputy Director for Operations
National Parks Service *
Department of Interior
Washington, D. C. 20240

Erving Senzel, Assistant Director, Legislation and Plans
Bureau of Land Management *
Department of Interior
Washington, D. C. 20240

* Citizen groups should contact Regional offices prior to contacting the national office.

Ellis Armstrong, Commissioner
Bureau of Reclamation *
Department of Interior
Washington, D. C. 20240

Federal Activities Branch for (Permit Review)
Water Quality Office
Environmental Protection Agency *
Washington, D. C. 20406

Environmental Resources Branch, Planning Division
Civil Works Directorate
OCE
Washington, D. C. 20314

Economic Evaluation Branch
Civil Works Directorate
OCE
Washington, D. C. 20314

Water Resources Council
Suite 900
1025 Vermont Ave., N. W.
Washington, D C 20005

Board of Engineers for Rivers and Harbors
Temporary C. Bldg.
2nd and Q Streets, S. W.
Washington, D. C 20315

Council on Environmental Quality
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Stony Brook, New York 11790

Conservation Foundation
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Wash. D.C. 20036

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Coordinator for Water and Related
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400 7th St. S.W.
Wash. D.C. 20591
~~[illegible] Railroads~~
~~Assoc. of American Railroads~~

Berton Behling V.P.
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1920 L St. N.W.
Wash. D.C.